Vol. III

TRANSCRIPT OF RECORD

Supreme Court of the United States

OCTOBER TERM, 1936

No. 539

THE OHIO BELL TELEPHONE COMPANY,
APPELLANT,

vs.

THE PUBLIC UTILITIES COMMISSION OF OHIO

APPEAL FROM THE SUPREME COURT OF THE STATE OF OHIO

FILED NOVEMBER 20, 1936.

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By Mr. McConnaughey:

Q. In connection with your testimony in reference to the completion of calls you stated that there had been an increase of toll revenues from 1920 to the end of 1925, I think, of $15,000,000. Do you mean to say that in 1925 the toll revenues were fifteen million dollars more than in 1920; is that correct?

A. No; I mean to say that the toll revenues in 1925 were $15,000,000 more on account of improved completion. There was, in addition to that, a considerable increase in the toll revenue due to the growth in the toll business.

Q. Well how did you determine the fifteen million dollars to be because of the improvement in completed calls?

A. Well we have a certain amount of business offered to [fol. 2573] us. We get a certain amount for each call that we complete. Now if we complete 80 per cent of the business we get 80 per cent of the revenue that is offered to us. Take, for instance, that that is $100; if we get $100 worth of toll business offered and we complete 80 per cent of it we get $80; if we complete 90 per cent of it we get $90.

Q. And that is the method on which you determined the fifteen million dollars?

A. Yes, sir.

Q. Have you your calculation on that applied to the whole system?

A. No.

Mr. McConnaughey: I think that is all for the present.

And thereupon the further hearing of this case was adjourned until Friday, February 26, 1926, at 10 o'clock A. M.

[fol. 2574] Morning Session

Friday, February 26th, 1926.

And also Edward V. Cox, called on behalf of The Ohio Bell Telephone Company, being first duly sworn, testified as follows:

Examined by Mr. Burr:

Q. You may state your name?

A. My name is Edward V. Cox.

Q. What position, if any, do you occupy with The American Telephone & Telegraph Company, which will hereinafter be referred to as the American Company?

A. I am employed as assistant vice president.

Q. Is that the same position which you occupied when you testified before this Commission in what is known as the toll rate case, A. U. R. P. 124?

A. Yes, sir.

Q. You are the Mr. Cox who testified in that case?

A. Yes, I am.

Mr. Burr: At this point we offer in evidence all of Mr. Cox's testimony taken in the toll rate case which has been referred to, together with all exhibits offered in connection with his testimony taken at that time.

[fol. 2575] Q. Do you remember the date of your testimony so that we can identify your former testimony in the record?

A. Well, just two years ago, but I haven't the exact month or the date.

Q. Wasn't it May 19th, 1924, refreshing your recollection?

A. Yes, I think that is it.

Q. What are your present duties?

A. My duties relate exclusively to the supply service of the Associated Companies. It is my business to study their supply program from every standpoint, the purchasing, the storing, the distributing of supplies; the object being to devise every expedient that I can to improve the service and to reduce costs to the Associated Companies.

Q. Do your duties in that respect differ substantially from your duties as they were at the time of your former testimony?

A. No, sir, they are the same.

Mr. Burr: Let it be understood that where reference is made by Mr. Cox to the former testimony it means his testimony in the toll rate case.

Mr. McConnaughey: Have you an easy reference to the page of the record?

Mr. Burr: I can get it, Mr. McConnaughey. I had it with my notes but the page has been displaced. I can tell you from memory that page 1912 comes early in Mr. Cox's testimony.

Mr. McConnaughey: Well, that is all right.

Mr. Burr: That will help identify it at least.

Mr. McConnaughey: I thought I had it but I looked for [fol. 2576] it and couldn't locate it.

Mr. Burr: I thought we had brought with us this morning the volume containing Mr. Cox's previous testimony, but on looking through the index I find that it is not in any of the volumes we have with us here today.

Q. Mr. Cox, are you familiar with the contract between The Ohio Bell Telephone Company, hereinafter sometimes referred to as The Ohio Bell Company, and The Western Electric Company with respect to the supplies and apparatus which The Ohio Bell Company purchases or may purchase from The Western Electric Company?

A. Yes, I am.

Q. Does your former testimony apply with like force today to the relationship between The Western Electric Company, The Ohio Bell Company and The American Company arising from and growing out of the standard supply contract between The Western Electric Company and The Ohio Bell Company just referred to?

A. Yes, it does.

Q. And when you speak of the supply contract or the standard supply contract, what contract do you mean?

A. I mean the contract which is standard between The Western Electric Company and all of the Associated Companies of the Bell System. All the contracts are identical in terms and the contract with The Ohio Bell Telephone Company is just one of that series.

Q. Does The Ohio Bell Company still purchase apparatus and supplies from The Western Electric Company under that contract?

A. Yes, sir, it does.

Mr. Burr: For the purpose of further identifying the [fol. 2577] contract let the record show that it appears as Cox Exhibit No. 1 in the toll rate case.

Q. Have there been any changes in the supply contract since your former testimony?

A. Yes, sir, there are changes in several respects. The contract has some subdivisions, some supplementary contracts, and these supplementary contracts have been modified as of January 1st of this year.

Q. Do those supplements change the general intent or effect of the contract?

A. No, sir, they do not.

Q. Have you with you a copy of the contract as amended?

A. Yes, sir (producing same).

Mr. Burr: Let it be marked as Cox Exhibit A-1, and we offer it in evidence.

And thereupon the Contract above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted and marked Cox Exhibit A-1.

Q. And I will ask you, Mr. Cox, whether the contract has been amended in any other ways except as shown by Cox Exhibit A-1?

A. No, sir, it has not.

Q. Will you state briefly, if you please, the essential features of the contract, describing the changes which have been made since your former testimony?

A. First of all this contract provides that The Western Electric Company shall maintain store rooms for the bene- [fol. 2578] fit of The Ohio Bell Company, and also store room stocks.

It then provides that The Western Electric Company will purchase and warehouse such articles not manufactured by itself as the Ohio Bell Company may order and which are available from other suppliers.

In that connection, The Western Electric Company pays for these articles itself; carries the investment; adjusts any transportation claims arising either from the shipments to the storehouse of the Electric Company or to the Telephone Company; prepays transportation charges; and for this service it charges a commission. That commission is specified in a sub-contract known as Section 3 appearing in this group of sheets, and that is one of the items which has been changed. That is to say, the rate of remuneration is different now from what it was at the time of my former testimony.

Turning to the sub-contract, being Section 3——

Q. You are now referring to Cox Exhibit A-1?

A. Yes, sir.

Q. Proceed.

A. We find that there are—that these remuneration rates are based on two conditions. There is a difference between the rates that are applied to shipments made direct from the supplier to the Telephone Company and those which are made to a warehouse of The Western Electric Company; in other words, where storage is involved on the part of The Western Electric Company there is a different rate and a higher rate than applies to the direct shipments.

Now in every case these rates are applied to the net cost [fol. 2579] to The Western Electric Company making this purchase; in other words, all discounts, quantity, cash or of any other nature, are first taken from the bill of the supplier to The Western Electric Company, and the commissions shown in this Section 3, 10 per cent for a shipment that is warehoused and 3½ per cent for a shipment made direct from the supplier, are applied to these net costs to The Western Electric Company.

The next feature of the contract relates to the articles which are manufactured by The Western Electric Company itself; these are covered in Section 4 of the contract, the major contract going back to Sheet One of this exhibit, and it is specifically provided there that there is no obligation on the Telephone Company to make any such purchases. If the Telephone Company desires to make them, the price is the most favored customer price to the Telephone Company and there is no remuneration charge in addition to that price.

Section 7 of the contract provides for a number of special services which are related to a supply business of this kind, such as receiving surplus or used supplies returned by the Telephone Company; making special engineering inspections of supplies that are not manufactured by the Electric Company; they are all listed under Section 7.

Some of these have been changed since my former testimony and I will take them up in detail in a few minutes.

Another feature of the general contract is the basis of [fol. 2580] payment by the Telephone Company.

The shipments that are made during any month are not billed until the end of that month and that bill is not payable until 30 days after it has been rendered.

It is also specifically provided that this supply contract shall terminate whenever the license from The American Telephone & Telegraph Company is terminated. That ap-

plies either to the Telephone Company or to the Electric Company.

Now referring to the changes that have been made in the contract, there is one in the supplementary contract covering Section 7d. This section covers engineering inspections, and the change that has been made is to reduce the number of classifications against which charges are provided. These are all on a percentage basis applying to the net cost of these supplies to The Western Electric Company. And instead of having a somewhat more complicated grouping they now have only three classifications, and the combinations of these rates would result in a lower charge than the former set of rates.

Another item which has been changed is the supplementary contract covering Section 7f.

You will note that there is no sheet for that now because the change has merely been to eliminate it from the contract altogether. It is included in the main contract under Section 7, and there is suggested as follows:

"Section 7f. Furnishing paper to printers for directories and printed forms and carrying the investment thereon." [fol. 2581] The charges that were made under that section of the contract are now taken up in the general purchasing charges that are included in Section 3, to which I have already referred.

An example of what has happened here is illustrated best in the case of a telephone directory.

Under the old basis The Western Electric Company would not only purchase the directory but it would make a purchase of the paper that would go into the directory because there is a very substantial saving there owing to the enormous quantities of paper used for that purpose.

The Bell System purchases some 30,000 tons a year of news print for that purpose, and by consolidating those purchases a very large saving is made in the paper.

There is a charge made for that service and then there is also a charge made for the directory itself.

Now the charge for purchasing the paper is eliminated and the charge for purchasing the directory still stands.

Referring to another section which has been changed, that is the supplementary contract covering Section 7g. In this case it is merely a re-statement of the contract to simplify its application. There is no change in the rates or in the remuneration in any regard.

Q. Did you discuss the effect of the change shown by Section 7a and the net savings to the Telephone Company effected by it?

A. No, sir, I did not. The changes that came about in this Section 7a are an increase to the charges to the Tele-
[fol. 2582] phone Company.

This entire contract, so far as it deals with remuneration rates, is worked out on this basis; there is no requirement in the contract that it should be, but it actually is worked out on the basis of cost to The Western Electric Company; that is to say, the remuneration rates are so set up that they will return on an average to The Western Electric Company the cost of conducting the activity plus a return on the investment, which, in making checks, I always assume at six per cent. It is my business to keep in touch with those costs, so that I currently review them and I know that the charges are fair.

In fact, the reason for making a change in this Section 7a was that the charges were ridiculously low. They would have resulted, in the 1925 business, on returning to The Western Electric Company about one per cent on the investment; that is to say, there would have been nothing in the way of interest on the money at all if this one per cent had been removed. It now returns something less than six per cent.

The other changes resulted in a reduction in the charges to the Telephone Company.

The net changes, so far as the whole Bell System is concerned, for these contracts amounted to some $500,000.00.

Q. You are still referring to the change in Section 7a?

A. This is all of the changes.

Q. I see.

A. All of the changes in this contract that went into effect
[fol. 2583] January 1st, 1926. It will result in an increase to the Associated Companies of about half a million dollars, and that is currently met by a decrease in the charges for the Western Electric Company's own apparatus amounting to about five million dollars, so that the net result of the changes going into effect January 1st is a decrease of about $4,500,000.00.

Mr. McConnaughey: That is a saving on an annual basis?

The Witness: Yes, sir, that is per annum.

By Mr. Burr:

Q. Does The Ohio Bell Telephone Company still have the advantage of the most favored customer price, and does The Western Electric Company under the standard supply contract sell to all the Associated Companies, including The Ohio Bell Telephone Company, at uniform prices?

A. Yes, sir, it does; and The Ohio Bell Telephone Company has the benefit of the most favored customer price, not only as regards the Associated Companies but the entire business of The Western Electric Company. That is one of the obligations that I have, to be able to tell at all times that that is actually being done, and I am constantly making studies to verify that situation.

Mr. Burr: I think at page 1888 in the record of the toll case you referred to the same subject, and I only call attention to it here, Mr. McConnaughey, as giving you another reference to the testimony of Mr. Cox in the previous case. I see now by my notes that it extends back as early as [fol. 2584] page 1888 of the record.

Q. Is there any obligation on the part of The Ohio Bell Company to buy the Western Electric apparatus and supplies, either under the contract or otherwise?

A. No, sir, there is not. And, as a matter of fact, they do make large purchases outside of the contract direct from other suppliers.

Q. To whom do you refer when you say "they" make purchases?

A. That is The Ohio Bell Telephone Company.

Q. Are the moving considerations for the supply contract and the resulting benefits accruing from it to the Ohio Bell Company substantially the same as at the time of your former testimony?

A. The moving considerations are the same. The benefits are increased because their volume of purchases is larger.

Q. Do The Western Electric Company and The Ohio Bell Telephone Company function under the supply contract in the same general manner and with the same general effect and results as when you formerly testified?

A. Yes, sir, they do.

Q. Are the services rendered by The Western Electric

Company to The Ohio Bell Telephone Company under the supply contract substantially the same as at the time of your former testimony?

A. Yes, sir.

Q. Do the same purchasing prices obtaining between The Western Electric Company and outside manufacturers as testified by you at page 1903 of the record in the toll case still obtain?

A. Yes, sir.

[fol. 2585] Q. Does The Ohio Bell Company still have the benefit of this price under the supply contract?

A. It does.

Q. Does your testimony at page 1908, et seq. of the record in the toll case with respect to obsolescence losses apply with like force today, if you know?

A. Yes, sir it does.

Q. Does The Western Electric Company sell to other than The Associated Telephone Companies?

A. Yes, sir, it sells wholesale to three large companies; The Graybar Electric Company for domestic business other than that of the Associated Companies; to The Northern Electric Company of Canada, for export to Canada, and The International Electric Corporation, for exports to other countries than Canada.

Q. What is the Graybar Electric Company Incorporated?

A. This is a newly incorporated, wholly owned, subsidiary of The Western Electric Company; it was organized last December to take over the supply business of The Western Electric Company.

By "supply business" I mean the business which The Western Electric Company had prior to that date—had with concerns other than the Associated Companies; that is the general trade; and these two sides of the business had been physically separated since about 1923, with different warehouses and different managers on the two sides. To that this physical separation has now been met by a difference in the corporate obligations.

[fol. 2586] Q. What is the price arrangement between The Western Electric Company and the Graybar Company with special reference to the price arrangement between The Western Electric Company and the Associated Companies?

A. The Western Electric Company may charge the Gray-

bar Company more than it charges the Associated Companies, but it cannot charge it less. The result is that if the Graybar Company is to pay its expenses in handling products manufactured by The Western Electric Company and obtain a profit for itself, it has got to charge, and does charge, substantially higher prices to its customers than The Western Electric Company charges to its Associated Companies. In other words, cost to the Graybar Company is price to the Associated Companies on the manufacture of The Western Electric Company.

Q. What are the arrangements with respect to the prices of The Western Electric Company of apparatus and supplies for export?

A. They are identical with the arrangements with the Graybar Company. The effect of that is that the prices of Western Electric apparatus and supplies sold throughout the world are at a higher price than the prices of the same articles sold to the Associated Companies; in other words, it is not merely a competitive condition that covers the United States, but The Western Electric Company is in competition with the world on a higher basis of price than The Ohio Bell Telephone Company has to pay.

Q. Are Western Electric telephone apparatus and supplies sold to the general trade but at prices higher than [fol. 2587] the prices for the same or similar commodities to the Ohio Bell Company?

A. Yes, sir; they are sold in very large volume. Since January 1st those sales would be made through the Graybar Company in the domestic trade. It amounts to millions of dollars annually.

Q. Generally speaking, to whom does the Graybar Company make sales of articles manufactured by The Western Electric Company?

A. It sells to independent telephone companies.

Q. By "independent telephone companies" do you mean those which have not the benefit of the supply contract?

A. Yes, sir; and all companies which have not the benefit of the supply contract would be dealt with by the Graybar Company.

There are also large sales made to railroads and power companies. I might mention there the telephone system of the Pennsylvania Railroad Company, which is very extensive.

Sales are also made to telephone companies; and any domestic customer desiring communication apparatus would be dealt with by the Graybar Company.

There are a few exceptions to that general principle; for example, one would be that if The Western Electric Company made sales to some other manufacturer so that the goods would be embodied in the product of the other manufacturer, then The Western Electric Company would make the sale direct. An illustration of that would be radio apparatus.

Q. Probably it has been covered by your previous an- [fol. 2588] swers, but if so let me ask you again whether or not The Ohio Bell Telephone Company under the supply contract purchases from The Western Electric Company direct or from the Graybar Company?

A. It purchases exclusively from The Western Electric Company.

Q. Does the general trade——

A. I mean exclusively as distinguished from the Graybar Company. It does purchase, as I have heretofore testified, large amounts of supplies from other than The Western Electric Company, but not from the Graybar Company.

Q. And by "it", you refer to The Ohio Bell Telephone Company?

A. Yes.

Q. Does the general trade now purchase from The Western Electric Company or only from The Graybar Company?

A. It purchases from the Graybar Company with the exceptions that I have already stated.

Chairman Marshall: Have you any figures showing what the protection is that the Associated Companies get over the sales to other independent companies?

The Witness: Yes, I will show that specifically in an exhibit very soon.

By Mr. Burr:

Q. At page 1912 of the record in the toll case you testified that the basic price to The Ohio Bell Telephone Company of supplies purchased by The Western Electric Company for it from other suppliers or manufacturers is the

net cost of those supplies to The Western Electric Company; what is the fact with respect to that situation under the supply contract as in force today?

[fol. 2589] A. It is the same.

Q. If the Ohio Bell Telephone Company purchases telephone apparatus from some supplier company other than The Western Electric Company does The Western Electric Company receive any payment or consideration of any kind on that account?

A. No, sir, it does not.

Q. Reference has already been made to the favored customer price to The Ohio Bell Telephone Company, and it is my recollection that you testified on the same subject at page 1913 of the record in the toll case. Is that situation still true at the present time?

A. Yes; I currently watch it to know that it is true continuously.

Mr. Dotson: Why not have him explain fully what he means by "favored customer price"? I don't believe that has been brought out.

Mr. Burr: Quite right. It has been gone into at length in the toll rate case, but at the risk of repitition, to that extent I will ask Mr. Cox to please explain the meaning of the favored customer clause.

Mr. Dotson: I assume he can state it briefly. I did not remember that it had been fully gone into formerly.

The Witness: That is defined in Section 4 of the contract itself. This deals with articles manufactured by The Western Electric Company, and contains this phrase:

"Such articles manufactured by the Electric Company as the Telephone Company may order and the Electric Company furnish from time to time shall be furnished [fol. 2590] without the addition of any service charge at prices which shall be as low as the Electric Company's prices under comparable conditions to its most favored customers in effect on the date of shipment."

That same provision would apply to any other phase of this contract; that is to say, the Associated Company or The Ohio Bell Company would never get terms or charges less favorable than the charges to the most favored customer elsewhere.

Mr. Dotson: Who determines the question of favored price and terms as defined in the provision you have read?

The Witness: The Western Electric Company makes its prices, but I check those prices; I check their terms of contracts; I actually see copies of the bills they have rendered periodically; I periodically check up the bills they have rendered to customers throughout the United States and compare those charges and terms with the charges or terms that would be proper under the supply contract, and I know that that feature of the contract is strictly followed.

Mr. Dotson: You have no control or influence in determining the question of comparable conditions and favored prices and terms as described in this provision?

The Witness: My duties would let me have no control, but they would let me have influence on thise prices; because the studies that I make are directed to reducing the costs to the Associated Companies; and if I discover any [fol. 2591] way that the charges can be reduced I bring it to the attention of The Western Electric Company and would insist that these prices be brought down to the basis on which I have already testified.

Mr. Dotson: Well, the influence that you say you would have would be simply over your suggestions and your good offices in carrying out your understanding of this contract?

The Witness: Yes, sir; but as I have already said the remuneration rates provided in this contract are intended to return not to exceed six per cent on the investment necessary to conduct the activity. Now that is not an adequate rate for an ordinary business concern, and The Western Electric Company, if it were to charge rates as low as that to these other customers, would lose money in the transaction. So I do not have to pay attention to the other side of the business. The other side of the business is always higher than the charges to the Telephone Company. But I check to see that that is so.

I might say that no change in the price list either of The Western Electric Company to the Associated Companies or of the Graybar Company to its customers would be made without being checked by me to ascertain whether this contract was violated.

Mr. Dotson: What is the prevailing difference between the prices as understood to be the most favored prices, or prices to the most favored customers, and the prices that are observed in other respects?

[fol. 2592] Mr. Burr: Do you mean the prices charged by the Graybar Company?

Mr. Dotson: Well, it may be.

The Witness: If you could defer that, I think it will be answered much more clearly a little later.

Mr. Dotson: Very well. Now what is your understanding of the phrase "under comparable conditions"; what enters into that and constitutes it?

The Witness: I think the phrase really speaks for itself. But the Associated Companies are always given the benefit of any doubt that might arise. They get absolutely the lowest charge, and "comparable conditions" is merely put in here in case something very unusual should happen.

Mr. Dotson: What might that be?

The Witness: Well, I can imagine a condition where when the United States Government would come in and ask for some very special consideration.

Mr. Dotson: Don't you think it would be broader than that and have application in the ordinary course of business?

The Witness: Well, the condition has never approached comparability. I mean the prices have always been so much higher to the general trade than they have been to the Associated Companies that comparable conditions have not really entered into it at all.

Mr. Dotson: Well, what I am trying to get at is your understanding of comparable conditions. I would like to have your definition of it if you can give it.

[fol. 2593] The Witness: Suppose quantity was involved; the Telephone Companies, the Associated Companies, should get the price as low as to the most favored customer for the same quantity; that would be comparable conditions.

Now what actually happens is this; the Associated Companies get the lowest price for an order of one; in other words, regardless of the quantity, the Associated Companies get the lowest price. That is not true as to the general trade. The general trade follows the ordinary business relation of lower prices for larger quantities. The Telephone Company always gets the best.

Mr. Dotson: Well, that specific instance is simply a statement of a rule that prevails in the trade in general, is it not, that quantity does affect price?

The Witness: Yes, but it does not affect the price in the

case of the Associated Company; they get the lowest price regardless of quantity.

Mr. Dotson: That is the only element now that you can think of that would give significance and meaning to that phrase "under comparable conditions"?

The Witness: Oh, no. Another one would be the question of freight. In other words, the point at which delivery is made F. O. B.

Now in the case of the Associated Companies the shipments are F. O. B. the territory of the Associated Company. Switchboards would be delivered here in Ohio, freight paid to Ohio. There is no obligation at all to do that in the case of the general trade, and it would not be done. [fol. 2594] The freight would be charged.

Mr. Dotson: Well, in what way would that affect the price of the article itself? You simply, in the case of the Associated Company, add freight to it—to the prices that they pay?

The Witness: I think I misunderstood your question. May I have it repeated, please?

(Question read.)

The Witness: In the case of the Associated Company the freight is not added. It is delivered freight paid. But in the case of the general trade there would be freight charges in addition to the price; so it is that much higher to the general customers than it is to a telephone company like The Ohio Bell Company.

Mr. Dotson: Well, some one pays the freight on this material that is shipped to the Associated Companies; isn't that reflected in the prices they pay, although it is prepaid by The Western Electric Company?

The Witness: Yes; of course it is included in the prices, but the price F. O. B. the Ohio point is the same as the price might be to another customer F. O. B. the factory, which is near Chicago, so that the advantage lies with The Ohio Bell Telephone Company. That is true all along the line.

Mr. Dotson: Well, that is just a method of fixing prices on different terms to customers other than the Associated Companies?

The Witness: Yes, in every case the Associated Company [fol. 2595] getting the benefit.

By Mr. Burr:

Q. Are any companies not controlled by the American Company parties to the supply contract, if you know?

A. Yes, sir, there are; The Southern New England Telephone Company has this contract, and the ownership of The American Telephone & Telegraph Copmany in that Company is 33.34 per cent. The Cincinnati & Suburban Bell Telephone Company is also a party to the contract, and the interest of the American Company in that Company is 29 per cent, and I think seventy-one hundredths per cent.

Q. Do telephone companies other than those having supply contracts with The Western Electric Company still purchase Western Electric Company supplies and apparatus?

A. Yes, sir, in very large volume.

Q. In your former testimony you submitted Exhibits 3 and 4 comparing the prices of The Western Electric Company to the Associated Companies and to the general trade on the one hand with prices of independent manufacturing companies for similar apparatus on the other hand. Have you prepared similar studies bringing this comparison down to date?

A. Yes, sir, I have.

Mr. Burr: The study may be marked Cox Exhibit A-2, and we offer it in evidence.

And thereupon the Document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted and marked Cox Exhibit A-2.

[fol. 2696] Q. Now that exhibit shows a comparison between the Western Electric prices and the general trade as compared with the Kellogg prices, the Stromberg-Carlson prices, and also as compared with Western Electric Company prices to the Associated Companies, doesn't it?

A. Yes, sir, it does.

Q. What is the Kellogg Company, or, to use its full name, The Kellogg Switchboard & Supply Company?

A. That is a very important manufacturer of manual telephone apparatus, having its factories located at Chicago, Illinois.

The Stromberg-Carlson Company, which is also referred to in this exhibit, is a similar company with factories at Rochester, New York.

These two companies together represent by far the largest independent manufacturing companies selling manual telephone apparatus.

Q. Will you please explain the curves shown in the exhibit, following that with a discussion of the amounts and percentages which occupy the lower half of the sheet one of the exhibit. Of course in that connection you would also have to take into consideration the other pages of the exhibit, but explain first, if you please, the curves shown in the upper half of page one?

A. These curves represent the relative price levels on a weighted basis for sales by The Western Electric Company to its two classes of customers; that is to say, the Associated Companies and the General trade, with the price [fol. 2597] levels of these other two manufacturing concerns.

Q. For comparable apparatus?

A. For similar apparatus.

The solid black line appearing at the upper part of the curve represents the prices of The Western Electric Company in the general trade.

There is in that same group a dashed line which represents the price level of the Stromberg-Carlson Company, and somewhat lower than the price level of the Stromberg-Carlson Company is a dotted line showing the price level of the Kellogg Company.

Q. Those levels are for comparable apparatus sold in the same periods by each of those companies?

A. Yes. Then below that is a somewhat heavier solid black line which represents the price level of The Western Electric Company to the Associated Companies and The Ohio Bell Company.

Q. That also is for the same period and for the same apparatus?

A. Yes, sir, all for the same period and the same apparatus, so far as the items are comparable; and I think it might be well to explain a little as to how the exhibit is set up, how these items are compared, because unless that is done fairly, obviously the results would not be fair.

Now in order to obtain this data or this exhibit I did this; I first of all took the most important classes of telephone apparatus sold to the Associated Companies and then I took the most important items representing these respec- [fol. 2598] tive classes of apparatus and I show the items

that were selected under Column B, of page 2 of this exhibit. I then compared these items of apparatus with the products of the Kellogg and the Stromberg Companies.

I actually obtained the apparatus from these other companies, made these purchases and physically and electrically compared these items so that I would know that I was fair.

In every case the item which I have shown as comparable —that is to say, the Western Electric item comparable to the Kellogg item or the Stromberg item, I have thrown any element of doubt in favor of these independent manufacturing concerns.

I would like to illustrate a few of those cases.

The item which I have here in my hand is a strip of 20 No. 92 jacks as made by The Western Electric Company. Now that is the most important item on this sheet, and that is in turn compared with the Stromberg item and the Kellogg item. These all function in an identical fashion, but they are not identical. They are not the same length.

Q. By a fraction of an inch?

A. But that is enough so that you could not mount one jack in a board that was designed for the other without specially altering your boards. Furthermore, they do not mount in the same way. There is a different mechanism for securing them in position. These jacks are what the subscribers' lines are terminated on. Each hole here represents one jack, and the subscribers' lines are terminated [fol. 2599] on that, and in order to make a connection there is a plug inserted in the jack and then there is a cord which comes from that plug to the keyboard, and another cord going to another plug which is inserted in some other subscriber's jack.

Now that is the mechanism of the switchboard.

Now not only would these jacks not mount interchangeably in the switchboards of different makes, but the plugs that are used with them will not function interchangeably with the jacks. This plug, for example, will fit the jack that it is meant to operate with, but it will not work with another jack; while it enters the position the connections would not be properly made at the plug end. Here is one that won't go in at all.

So that if you have got a Stromberg board with Stromberg jacks in it you cannot use Kellogg plugs; they won't work.

Now I have assumed in these comparisons that all of

these jacks are identical. Similarly I have shown that the plugs are all identical. Now as we go to other phases of the boards you will note little differences creeping in.

For example, here are the cords that connect the operator's set to the telephone that she wears; and I will just make these all the same length by starting them in uniform fashion at one end. Now you will note that at the other end they are quite different in length. Now the longest one is the Western Electric Company cord, and although one of these is 18 inches shorter I make no reference to that in the pricing developed from these price comparisons. They [fol. 2600] are all assumed to be identical, although obviously there has been an advantage given to the manufacturer of the shorter cord.

The same thing is true in another item; I have here what we call lamp sockets; these hold the little switchboard lamps that light when there is a signal given to the operator. Here is The Western Electric Company's item; there is a corresponding item of another manufacturer, and here is the corresponding item of the third manufacturer.

Now obviously the Western Electric Company's item is more expensive to make but there is no weighting given to that fact in the pricing which is used in this study; they are all assumed to be identical.

Or take still another situation. Take the keys which the operators use in ringing the subscriber or listening in on a connection. This is The Western Electric Company's product. Here are the products of the other manufacturers. The solidity of The Western Electric Company's item is quite outstanding but there is no reference to that in these comparisons.

Furthermore, The Western Electric Company's item may have more springs; it may accomplish more things; it may make more contacts, or if the lever is thrown in another direction the key may break more contacts. In other words, it may perform a larger number of functions than the key which is manufactured by one of these competing concerns. It is the nearest equivalent that I can get; but I make no reference to that fact; I have taken the nearest item which [fol. 2601] I can get which is fair to the other concerns.

Now corresponding to that I have also eliminated from this study other items where The Western Electric Company's product was less expensive to make; for example, I have no comparison here for switchboard cable, which is

a very important item. It runs into millions and millions of dollars, and The Western Electric Company's item there runs from 30 to 50 per cent less than the corresponding item manufactured by these other concerns. But it is slightly cheaper to manufacture because these other concerns have the conductor covered with a coating of tin, whereas The Western Electric Company's item is coated with enamel, which is much less expensive to apply, so I have eliminated that although it would be a very favorable comparison to use here as far as The Western Electric Company is concerned.

Now having in that way ascertained comparable items which are fair to these competing concerns, I then proceed to price the articles and to weight the prices with the sales of The Western Electric Company made of the corresponding item during the year 1924; that is the latest year for which I have the figures available.

If you turn to sheet 3 you will see exactly what was done.

We have here the prices of The Western Electric Company to the Associated Companies.

You have under Column A the list of these different articles, and then in Column B the quantities that were sold during the year 1924, and then in successive columns under [fol. 2602] different pricing dates I have the prices ruling as of that date, and the extension of the price times the quantity.

Now the same quantity applies to each pricing date. The result is that the footing of the respective columns under these different pricing dates will show what this constant bill of goods would have cost as of these respective pricing dates.

Now that is brought forward to the first sheet of the exhibit and appears there under the heading "Associated Company" opposite the respective pricing date.

Exactly the same system was followed in pricing the products of these other concerns.

Now the point that I would like to press here is that the quantity used for any particular item remains constant, not only for all companies but for all dates. The only changes that are here are those that come about by reason of changes in the pricing; so that the result of this study shows the relative price levels as of the periods indicated.

Now to take just one year, to show how this result works out, we will take the situation as it existed on January 1st,

1926. This bill of goods would have cost the Associated Companies $21,430,787.00. The same articles sold by The Western Electric Company to the general trade would have cost the general trade $29,318,625.00; which is 137 per cent of the Associated Company price.

The corresponding price of The Kellogg Switchboard & Supply Company would have been $31,070,024.00, which is [fol. 2603] 145 per cent of the Associated Company price; and the corresponding price of the Stromberg-Carlson Company would have been $31,342,014.00, which is 146 per cent of the Associated Company price.

The exhibit here differs from the corresponding exhibit introduced by me at my former appearance in two ways; first of all, the items that are used here as the representative bill of goods are slightly changed by reason of the facts that some items have superseded others.

The telephone business is in a constant state of flux and as items are superseded they cannot properly enter a picture of this kind, so that I have had to substitute newer items for some of the older items.

Furthermore, the volumes are different, because in my former study I used the quantities that were sold in the year 1922, whereas the quantites I am using in this exhibit are those that were sold in the year 1924.

Mr. Shuler: Do you know the volume of business done per annum by either the Kellogg or Stromberg Companies?

The Witness: Approximately. It is about $5,000,000.00.

Mr. Shuler: Then they don't do as much business as you have them figured out as doing?

The Witness: Oh, this is not an actual bill of goods. It is a representative bill of goods, assuming that they could have have made these sales.

Mr. Shuler: And assuming instead of making $5,000,000.00 worth of goods they made $27,000,000.00 worth [fol. 2604] of goods, the prices would be just the same on the $27,000,000.00 volume as on the $5,000,000.00 volume?

The Witness: That is all I can do, because we are interested in knowing the relative values and that is what I am setting forth here. It is the difference between The Western Electric Company's price as it exists and the prices of these other concerns.

Mr. Burr: At this point let the record show that with the consent of counsel and the Commission the apparatus used

by the witness in illustrating his comparisons between The Western Electric Company, The Kellogg Switchboard & Supply Company and The Stromberg-Carlson Company's apparatus shall not be offered in evidence but will be produced for the inspection or examination of either counsel or the Commission or their representatives at their request.

By Mr. Burr:

Q. You have stated that The Western Electric Company had two price lists, one to the Associated Companies and one to the general trade; have you made a comparison of those two price lists?

A. I have. I am accustomed to make those at intervals each year.

Mr. Burr: The comparison may be marked as Cox Exhibit A-3, and is offered in evidence.

And thereupon the Document last above referred to is admitted in evidence on behalf of The Ohio Bell Tele- [fol. 2605] phone Company and is herewith submitted and marked Cox Exhibit A-3.

Q. Will you explain the exhibit, if you please?

A. This exhibit makes a comparison between the two sets of price lists issued by The Western Electric Company under date of December 31st, 1925.

All of the items which are sold to the Associated Companies are not sold to the general trade. There are items that are restricted for the exclusive use of the Associated Companies; for example, repeaters and load coils.

In making this comparison I have taken all of the items which appear on both price lists, and every one of those items is shown on the attached sheet to this exhibit.

I have compared the prices as though an item of one was purchased, but in each case have taken the lowest price, regardless of the quantity. On that basis the results are as follows:

The total number of items found comparable between the two price lists are 2313.

The average differential between the two sets of prices was found to be 41.72 per cent. The lowest differential was 23.79 per cent and the highest was 400 per cent.

In other words, regardless of the item purchased there

would have been at least a differential of 23.79 per cent in favor of the price to the Associated Company.

Q. In your exhibits there appear certain supplementary [fol. 2606] notes, such, for example, as those on Cox Exhibit A-3. I will ask you who prepared those notes?

A. These were prepared by me.

Q. Are they true to the best of your knowledge and belief?

A. Yes, they are.

Q. In your former testimony there was offered in evidence Cox Exhibits 6 and 7, showing the total actual sales of telephone apparatus and lead covered cable to domestic non-contract customers for a series of years, and also what the same apparatus and cable would have cost on the basis of the standard supply contract. Have you prepared an exhibit bringing that testimony down to date?

A. Yes, sir, I have.

Mr. Burr: It may be marked Cox Exhibit A-4 and is offered in evidence.

And thereupon the Document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted and marked Cox Exhibit A-4.

Q. Explain that exhibit, if you please?

A. This exhibit shows the actual sales which were made by The Western Electric Company of telephone apparatus and lead covered cable to domestic customers which did not have the benefit of the supply contract, these sales being made in competition with independent companies on the basis of prices which have already been introduced in the [fol. 2607] prior exhibit.

To take just one year as illustrating the situation, take the year 1925 which appears at the lower part of the form.

The total actual sales to non-contract customers in that year amounted to $10,822,000.00.

Q. What does that exhibit show with respect to the sales on the basis of the supply contract?

A. That is shown in the next column.

Q. In the next column?

A. Yes, and if these identical sales had been made to the Associated Companies the prices would have been $8,223,000.00, showing a saving to the Associated Companies,

that is on the basis of the supply contract, of $2,599,000.00, or 32 per cent.

Q. This comparison is on the basis of actual sales, is it not?

A. Yes, this is the sales made in the open competitive market by The Western Electric Company, and the figures that I have here are the summation of their sales bills.

Q. Now in the last column of figures shown in the lower half of the sheet there appears certain percentages, one of which you have already given. What is represented by the other percentages?

A. That shows the summation for the years covered by this exhibit; that is, 1916 to 1925 inclusive; the total sales amounting to over $61,000,000.00; and had they been made to customers on the basis of the supply contract the price would have been a little over $47,000,000.00, showing a sav-[fol. 2608] ing on the basis of the supply contract of a little over $14,000,000.00, or 30 per cent for the period.

Mr. Shuler: May I ask a question, please, Mr. Cox?

The Witness: Yes.

Mr. Shuler: Are you familiar with the cost of manufacture?

The Witness: In a general way, yes.

Mr. Shuler: Are you familiar with the cost of manufacturing in these particular lines?

The Witness: In a general way, yes.

Mr. Shuler: What are the elements of cost in a manufacturing business of this kind? What are the elements that enter into cost?

The Witness: Well, they are direct labor and raw material, and then on top of that certain general expenses often called the burden of overhead, or similar terms.

Mr. Shuler: Is one of the elements of overhead——

The Witness: That is the manufacturing costs. There are different costs beyond that.

Mr. Shuler: What are those?

The Witness: We have the distributing costs; we have the general overhead company cost of everything, such as accounting and legal, etc.

Mr. Shuler: Have you any cost of acquiring business?

The Witness: That would be in connection with the commercial costs.

[fol. 2609] Mr. Shuler: That is an element of the price, isn't it?

The Witness: Yes, sir.

Mr. Shuler: In that class of business what per cent is recommended as conservative for the cost of acquiring business?

The Witness: I could not answer that question, sir; I don't know.

Mr. Shuler: You have no idea of it?

The Witness: No, sir.

Mr. Tolles: That hardly enters into the cost of manufacture.

Mr. Shuler: It certainly does, and Mr. Cox has so stated.

Mr. Tolles: Of course his salesmen, in soliciting trade——

Mr. Shuler: You have no idea of that per cent?

The Witness: No, sir.

Chairman Marshall: Is that all? Go ahead.

By Mr. Burr:

Q. Have any of the Associated Companies to your knowledge bought lead covered cable recently from other than The Western Electric Company, and, if so, with what results?

A. Yes, sir. There have been large purchases during the years 1923 and 1924 and 1925 by The New England Telephone & Telegraph Company, which operates in the New England States exclusive of the State of Connecticut. During those three years the New England Company purchased from a local supplier of lead covered cable having no con-[fol. 2610] nection with the Bell System 927,406 feet of lead covered cable for which it paid $224,770.00.

If that cable had been purchased from The Western Electric Company the New England Company would have paid, including freght, $196,587.00, showing that under The Western Electric Company contract it would have saved $28,-183.00 or 14.34 per cent.

Q. Why did the New England Company buy it from a supplier other than The Western Electric Company, if you know?

A. That was due to this situation; during the years following the war there was a tremendously backed-up demand for telephone service. The New England Company and all

other companies experienced that to a heavy degree, and The Western Electric Company's factory was not able to turn out all of the cable that was required. As a result of that the different Associated Companies were what you might call rationed with regard to their demands for lead covered cable. That is to say, at the beginning of each year they submitted their estimates to The American Telephone & Telegraph Company and the cable was apportioned between them.

If at a subsequent period it appeared that a company did not have enough cable—the New England Company having exactly that experience—two things could be done. Either the entire program could be revised, with perhaps hardship to some other Associated Company, or some other source of cable could be utilized.

Now the New England Company happened to have right in its own territory a large manufacturer of telephone cable. [fol. 2611] The result was that it was peculiarly placed to take advantage of that situation and did make these purchases.

Q. Does the Western Electric Company still deal in two main classes of commodities; that is to say, those which it manufactures and those which it buys on the outside and resells?

A. Yes, sir, it does.

Q. Your testimony on that subject appears at page 1918 of the record in the toll case, and I will ask you whether or not the facts with respect to those two classes of commodities are substantially the same as covered by your testimony there?

A. Yes, sir, they are.

Q. Of course with respect to sales to other than the Associated Companies your reference to sales by The Western Electric Company to the general trade refers, does it not, to sales to the general trade through the Graybar Company today?

A. Yes, sir, that is the condition today.

Q. Does the Graybar Company sell to the general trade articles not manufactured by The Western Electric Company of a kind similar to those sold by The Western Electric Company to The Ohio Bell Telephone Company?

A. Yes, sir, it does.

Q. Will you explain the difference between the specifica-

tion grades and the commercial grades of the supplies of non-Western Electric manufacture furnished by The Western Electric Company to the Associated Companies on the one hand and furnished by the Graybar Company to the trade generally on the other?

[fol. 2611] A. The articles used by the general trade are in general the normal factory run of the product. However, the telephone companies—that is, the Associated Bell Companies—believe that a superior grade is better suited to their purpose; that is to say, a stronger, better article will be more advantageous. The life is also involved in this question of the superior grade; so we have on the one hand the articles sold by the Graybar Company coming into the commercial class and the articles sold by The Western Electric Company to the Associated Companies being the specification or superior grade. It is very much the same thing as in a suit of clothes, whether you have a short, fiber or a long fiber wool fabric.

Q. Have you prepared an exhibit similar to your Exhibit No. 8 in the toll case comparing the prices of The Western Electric Company to The Ohio Bell Telephone Company as of January 1st, 1926, on the one hand, with prices of the Graybar Company for similar items to the general trade on the other?

A. Yes, sir, I have.

Q. Are these articles of non-Western manufacture?

A. Yes, sir, all of them.

Mr. Burr: The exhibit may be marked as Cox Exhibit A-5, and is offered in evidence.

And thereupon the Document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted and marked Cox Exhibit A-5.

[fol. 2613] Q. Will you explain in brief the comparison which the exhibit illustrates?

A. This exhibit takes a representative list of items not manufactured by The Western Electric Company and the corresponding items of the two grades are shown in couplets.

For example, taking the first two items that appear in this Exhibit we have "Bolts, carriage, ⅜ inch by 4 inch, galvanized"; the unit of pricing is shown to be 100 pieces, and

the price therefor by the Graybar Company is $1.49 to the public.

This same article, but conforming to Specification L 4472, that is to say, not only a superior article but specially inspected so that conformity is definitely known to exist, is sold by The Western Electric Company to the Associated Companies for $1.37.

Mr. McConnaughey: Does that price include the handling charges?

The Witness: Yes, sir; this is the price F. O. B. the warehouse stock at Cleveland with all Western Electric Company services included in the price.

Mr. Dotson: Are we to understand, Mr. Cox, that the Graybar Company does not handle any of the goods or material or equipment that is manufactured by The Western Electric Company for the Associated Companies?

The Witness: No, sir, that is not the fact.

Mr. Burr: The question is obscure; it might be construed two ways.

Mr. Dotson: Does the Graybar Company handle any of [fol. 2614] the equipment that is manufactured by The Western Electric Company for the Associated Companies?

The Witness: Yes, sir, it does. That is shown conclusively on Exhibit A-4.

Mr. Dotson: But it does not sell any of that equipment to companies that have not the benefit of the Western Electric Company contract?

The Witness: The Graybar Company?

Mr. Dotson: Yes.

The Witness: The Graybar Company sells only to companies which have not the benefit of the supply contract.

Mr. Burr: Read the former question. I do not believe the witness understood it.

(Record read.)

By Mr. Burr:

Q. If a specific article is manufactured by The Western Electric Company for use by one of the Associated Companies, does the Graybar Company handle that article or have any connection with the Associated Companies with respect to that article?

A. No, sir; but The Western Electric Company may have

a surplus in that article; that is to say, more than is required for the Associated Companies; in which case that surplus, although made for the Associated Companies, is available for the Graybar Company to sell to the general trade.

Q. But not for the Graybar Company to sell to one of the Associated Companies?

A. No, sir, not at all.

And thereupon a recess was taken until 1:30 o'clock P. M. of same day, Friday, February 26, 1926.

[fol. 2615] Afternoon Session

Friday, February 26th, 1926.

And also EDWARD V. COX, resuming the stand for further examination in chief, having been heretofore duly sworn, continued his testimony as follows:

Examined by Mr. Burr:

Mr. Dotson: I just want to ask a question before you start, Mr. Burr:

Mr. Burr: That is all right.

Mr. Dotson: Are the goods manufactured by The Western Electric Company and furnished to the Graybar Company inferior in quality to the goods that are furnished to the Associated Companies?

The Witness: No, sir, the articles are identical with this exception, that in the case of the Graybar Company the assembling of some of the articles is somewhat less elaborate; for example, a switchboard furnished to an independent telephone company by the Graybar Company may not provide as many features as a switchboard of the same capacity furnished to the Associated Companies; but the apparatus that would go in the one or the other would be identical.

Mr. Dotson: You mean it would be of the same material?

[fol. 2616] The Witness: Yes, sir, and the same apparatus.

Mr. Dotson: The specifications would be the same and the construction the same and the mechanism the same and everything in that respect, only omitting some details?

The Witness: Well, the switchboard framework would be a little less expensive in the case of the Graybar Company's sales and the circuits would be somewhat simpler.

Mr. Dotson: Well, do these goods furnished to the Graybar Company bear the stamp and are they known as the goods manufactured by The Western Electric Company?

The Witness: Yes, sir.

Mr. Dotson: So that they are not put on the market then as the goods of the Graybar Company?

The Witness: No, sir, they are to be marketed as Western Electric Company standard products.

Mr. Dotson: But they are sold at a higher price to the Graybar Company than the goods are sold for the Associated Companies?

The Witness: Do I understand you to say "to the Graybar Company"?

Mr. Dotson: Yes.

The Witness: No, sir; they might be sold higher as far as the arrangements between The Western Electric Company and the Graybar Company are concerned, but as a matter of fact the arrangements contemplate selling them at the same price to the Graybar as to the Associated Companies.

[fol. 2617] Mr. Dotson: But the manufacturing cost of the goods furnished to the Graybar Company is less than the manufacturing cost of the goods to the Associated Companies; isn't that true?

The Witness: Why, no, the same articles are being manufactured.

Mr. Dotson: Well, you have just stated that there are some differences in the assembling and probably some differences due to other processes that are employed in the manufacture which I am assuming cheapens the manufacture of the goods; is there such feature to the manufacturing of these goods?

The Witness: No, sir, excepting as you come to these assemblies, such as a switchboard; now you recognize that in the case of a switchboard it must be designed for the particular place where it is to be located. There will be certain provisions for a class of subscribers; in one town they may have party lines; in another town they may not have party lines. Now all of those elements, in varying quantities, serve to make the switchboard in that one case

a little different from the switchboard in the other. But 75 per cent of the value of the board is represented by the apparatus that goes into it, and while I cannot, in the comparison of price, compare the completed switchboards, because there is no basis for that comparison, I can compare the items that go into it. In other words, the 75 per cent can be compared item by item because they are identical. But the arrangements peculiar to the locality cannot be [fol. 2618] compared, and in those peculiar arrangements the Graybar Company is somewhat less expensive than the Associated Company products.

Mr. Dotson: Well, to the extent that those switchboards must be manufactured for the particular place in which they are to be installed, that applies the same to the switchboards built for the Associated Companies as for the Graybar Company?

The Witness: No, sir. Because the switchboards for the Associated Companies contain more of the apparatus, more relays or more resistance or the refinements for giving automatic signals, than are necessary in the case of the Graybar apparatus.

Mr. Dotson: Well, allowing all that, yet the specifications for the manufacture of switchboards, no matter whether they go to the Graybar Company or to the Associated Companies, must differ due to the requirements of each locality where they are to be installed?

The Witness: So far as the peculiarities of that situation are concerned, yes; but the elements that go to make up the situation are identical, and it is the elements with which I have dealt in these price comparisons.

Mr. Dotson: Well, just one question, not caring to continue this further except in a general way; the plan under which you are operating with the Associated Companies and with the Graybar Company is intended to give to the Associated Companies the advantage in a lower price for this equipment than the Graybar Company can secure?

[fol. 2619] The Witness: From its customers?

Mr. Dotson: Well, yes, from its customers in the open market?

The Witness: Yes, that is a fact—well, I will have to change that; of course the Graybar Company could secure a low price but only at a sacrifice of its profits.

Mr. Dotson: And the purpose of that is to prevent the

Graybar Company from becoming a competitor of The Western Electric Company among the Associated Companies or with the Associated Companies?

The Witness: I do not understand the question.

Mr. Dotson: Well, the purpose of the question is this, that you seek by this plan to place the Graybar Company always in the position where it can never bid for the trade or business of the Associated Companies; that it will have to have a higher price for its equipment in the open market than the Associated Companies are required to pay to the Western Electric Company?

The Witness: No, sir; that does not follow at all. First of all, the relation of this Graybar Company is no different at all from what it was when The Western Electric Company handled the Graybar side of the business as part of its own business. Now if the Associated Companies deemed it to their advantage to buy the assemblies which are special in the case of the Graybar and somewhat less expensive, they could do it absolutely, and the price would be lower correspondingly than the price which the Graybar Company actually charges to its customers. It is [fol. 2620] wide open to the Associated Company to order just what it wants.

Mr. Dotson: When the Graybar Company sells any of these goods to an Associated Company——

The Witness: Which it does not do.

Mr. Dotson: Do you mean to say that that Associated Company is entitled to a lower price than the Graybar Company will charge parties other than the Associated Companies?

The Witness: If I may restate that——

Mr. Dotson: All right; suit yourself.

The Witness: The Graybar Company does not sell to the Associated Companies, but the Associated Companies could buy from The Western Electric Company exactly the article that the Graybar Company is selling to its customers, and in that event it would get it at the cost to the Graybar Company, which is of course much lower than the price which the Graybar Company charges its customers. The option is entirely with the Associated Company to get the advantage of this arrangement.

Mr. Dotson: Well, that option you are referring to now simply refers or means that the Associated Company has

the option to buy direct from The Western Electric Company either the equipment of The Western Electric Company intended for the Associated Companies or the equipment that is intended for the Graybar Company?

The Witness: Exactly.

Mr. Dotson: And the price for the equipment depends upon the selection made?

[fol. 2621] The Witness: Yes, sir.

Mr. Dotson: But the Graybar Company—what I am aiming at is this; the Graybar Company has no right then, are we to understand, to sell any of The Western Electric product- to an Associated Company?

The Witness: It is not a question of right. The Associated Company could deal with the Graybar Company just as well as with The Western Electric Company, but it could not secure as low a price that way because the Graybar Company has to make a profit on its cost.

Mr. Dotson: That is it; the Graybar Company, to make a profit upon the cost of the Western Electric Company's product to it, must charge a price higher than the Associated Company would have to pay The Western Electric Company?

The Witness: Yes.

Mr. Dotson: Now the purpose of that is to prevent the Graybar Company from entering the market with The Western Electric Company insofar as the trade pertains to Associated Companies?

The Witness: No, sir; it is the other way around. The object is so as to put an automatic stop on the Graybar Company cutting below the price to the Associated Companies.

Mr. Dotson: Well, that turns out to be the same result, does it not?

The Witness: But the object is quite different.

Mr. Dotson: Well, it reaches the same result whether we figure it out that way or not. That is all, I think.

[fol. 2622] By Mr. Burr:

Q. Returning to Mr. Dotson's first question, which had to do with the difference between the quality or character of apparatus and supplies sold by The Western Electric Company direct to the Associated Companies on the one hand and apparatus and supplies sold by The Western

Electric Company to the Graybar Company for resale by the Graybar Company to the general trade, does the matter of inspection and specification have anything to do with the difference in the quality of the two kinds of supplies?

A. Well, as I understand that question, it relates to articles manufactured by The Western Electric Company?

Q. Yes.

A. And the inspection is identical for both sides of its business and must appear of course in the price.

Q. Take the matter of cross-arms, for instance?

A. Well, they are not manufactured by The Western Electric Company so when you take the other side of the business, that is to say, articles not manufactured by The Western Electric Company, then the inspection is an important element in the price because the goods sold by the Graybar Company to the commercial trade are not inspected. It is the factory output, and the goods, on the other hand, that are sold to the Associated Companies by The Western Electric Company are all inspected. That inspection is covered by contract, the cost of which was included in the prices that appear in Exhibit A-5.

Q. By reference to your Exhibit A-5, I notice that there [fol. 2623] are certain cases in which the Graybar price appears to be lower than the Associated Company price?

A. Yes, that is the fact.

Q. Now then that is true except in two or three instances, isn't it?

A. Yes.

Q. Shown in the exhibit?

A. Five cases, I think, altogether.

Q. Will you take up those instances and explain the difference in the prices shown there?

A. The first of these cases is the fourth couplet covering crossarm braces. The price of the Graybar Company for the commercial product is $8.92 per 100 pieces, whereas the specification article costs the Associated Companies $9.90.

There are two elements that account for that difference in price; first of all, the article itself is different. The crossarm braces for the general trade sold by the Graybar Company are not as well galvanized as those which go to the Associated Company, the result of that is that they will not stand in service as long. They will rust more

quickly and will have to be replaced at an earlier period.

Another element is the fact that these articles, crossarm braces, sold to the Associated Companies, are from the warehouse stock at Cleveland and include the ten per cent charge which is made over and above the cost to the Western Electric Company of purchasing those crossarm braces.

The price for the Graybar items is, however, not from [fol. 2624] stock. It happens that Cleveland can get shipment from Pittsburgh where these crossarm braces are made so that in their normal transactions the Graybar Company, instead of stocking those items, would give a less good grade of service than the Associated Company ordering from the factory instead of by furnishing from their own stock. The result is that there is a saving in expense to the Graybar Company, and that is another element in the price.

Coming to the next item where the Graybar Company is low, that is the clamps, the three bolt guy clamps. This item was referred to by Mr. Rhodes in his testimony yesterday. He brought out the fact that the new specification guy clamp was of nearly twice the holding power of the one that had been used prior, although that in itself was a specification article.

Now we have here in this comparison the latest type of guy clamp referred to, the commercial type, which is not as good as the specification type which this latest specification type replaced; in other words it is two grades lower.

Q. What is two grades lower?

A. The Graybar item; the result is that it would have been fairer if I had shown that one of these specification guy clamps at $23.61 a hundred was worth two of the other at $23.17 a hundred; in other words, it is really a comparison of $23.00 against $46.00 a hundred, but I have made no reference to that in the chart as it appears.

The next item is that of copper wire, No. 18 twisted pair [fol. 2625] insulated. This item and the next which follows it, copper wire No. 19 twisted pair, both have the same characteristics. These items——

Q. Just a moment; you say both have the same characteristics. Do you mean to say you are going to discuss the two items, the No. 18 and the No. 19 copper wire, under the same general heading?

A. Yes, sir.

Q. Proceed.

A. The specification in the case of these wires provides for an immersion test; in other words, the wire is tested under water; the commercial article is not so tested; and, as a matter of fact, the rejects from the specification article are simply transferred to the commercial pile and sold to that trade.

Q. What do you mean by an immersion test?

A. It is necessary in telephone wire to have a high grade of insulation in order to give satisfactory service under common battery conditions. In order to insure that this insulation is high grade the wire is tested under water and if there is any defect in the insulation, why, it is instantly made apparent by that test. The commercial articles are not so tested.

Mr. Postle: Are those wires that are rejected then sold as first class products?

The Witness: They become the run of the factory in the commercial trade, yes.

Mr. Postle: You spoke of them as the rejects?

The Witness: They are rejects as a specification article but they are up to the standard commercial grade.

[fol. 2626] The next item is that of locust pins. The price to the Associated Companies is $23.79 per one thousand pieces. The price of the Graybar Company to the general trade is $18.50.

There are two elements involved in this item. The wood of the specification article is very carefully protected. There must be no tendency to split; and the screw threads that hold the insulator in place must be perfect. These threads being turned on a wooden pin by automatic machinery at high speed are very apt to result in defective threads. The rejections on that score will reach 15 to 20 per cent, and these rejects, as in the case of the wire just referred to, become a part of the commercial supplies that are sold by the Graybar Company.

By Mr. Burr:

Q. How do they conform with the ordinary commercial requirements?

A. They are up to the standard of the commercial products.

Q. And they sell readily to the market?

A. Yes, sir.

Q. Is that true of all these other items?

A. Yes, sir, I think that is all of the items where the Graybar Company's price is lower than the Associated Company price.

Q. But, as I understand you, these articles that are sold by the Graybar Company in the open market generally do not come up to the specifications of the Associated Companies?

A. No, sir. The value to the Associated Company lies in buying the superior article which we call the specifica-
[fol. 2627] tion grade. However, if the Associated Companies should decide that they would prefer the commercial grade it lies with them to ask for it, and The Western Electric Company would then furnish the commercial grade and the price would be substantially under the Graybar price as it appears in this exhibit, because the margin between cost to the Graybar Company and price by the Graybar Company is very much greater than the remuneration which The Western Electric Company charges over the cost to it of the specification article.

Mr. Burr: Is that clear, Mr. Dotson?

Mr. Dotson: I think I understand it.

By Mr. Burr:

Q. You have testified with respect to the use of certain supplies of commercial grade?

A. Yes, sir.

Q. Tell the Commission whether or not The Ohio Bell Telephone Company uses any kind of supplies of that grade?

A. Yes, sir, it does.

Q. What?

A. The lines covered in general by the term stationery are very largely commercial grade. That is to say, it makes very little difference in giving telephone service whether the forms that are used are of one grade or another, or whether the ink is made by one concern or by another. It is simply a question as to the article which will give the telephone company the most for its money.

I can illustrate that in the case of typewriter ribbons. The ribbon manufactured by one manufacturer will make, we will say, 10,000 impressions. The ribbon made by an- [fol. 2628] other manufacturer may make 5,000 impressions. Now if they both cost the same money, why, obviously the one that gives 10,000 impressions is the one that should be used.

Now that principle is applied in determining the grade of supplies that shall be used in this general specification of stationery. But the articles that are sold in the general trade are selected without any superimposed specifications.

The same thing would be true of supplies such as used in buildings for janitor service, soaps and oils and things of that kind. In this particular line The Western Electric Company is able to pool the requirements of all the Associated Companies and to secure very substantial savings over what it would cost any individual Associated Company to buy these articles for itself. Their volume is not sufficient to get the lowest prices.

Q. Do you know in round numbers the number of tons or pounds of stationery purchased by the Associated Companies in a year?

A. No, I haven't that figure; but take paper all by itself, the Bell System purchased upwards of 60,000 to 75,000 tons of paper annually.

Q. Where does it purchase that?

A. There is another item which may come into this same specification of strictly commercial wear, I would mention silverware. Now we do not ordinarily think of silverware, flat silverware, as being a telephone product or a telephone supply, but it is. The operating rooms throughout the Bell System have cafeterias connected with them. There [fol. 2629] are some 500 lunch rooms of that kind run by the Bell System and the use of forks and spoons is very large. For example, the annual purchases in that line amount to some 15,000 dozen. The result of pooling this group of supplies is well illustrated because The New York Telephone Company, which is the largest of the Associated Companies, had a certain standard for the silverware in its operating lunch rooms, and they had dealt directly with the manufacturer for these articles. When that article was studied, which was within the last two years, by the General Staff, it was decided to standardise the identical item

that The New York Telephone Company had been using. When that was done, and The Western Electric Company was enabled to go direct to this manufacturer with a larger volume of business, a saving of 43 percent in the price was obtained. Now that is dealing with the same manufacturer, but simply with a larger volume of business.

Mr. McConnaughey: With what saving?

The Witness: 43 per cent. And that is taking the initial price and comparing the saving of that initial price.

If you turn it around the other way, and take the New York Company as it now purchases under the Bell System contract and compare that with the price that it used to pay, you will find instead of 43 percent that it is over 100 percent higher—or it is nearly 100 percent; it is 92 percent.

Mr. Postle: Is that 15,000 dozen annually?

The Witness: Yes, sir, annually. As I say, it will be approximately 92 percent. The old price is approximately [fol. 2630] 92 percent higher than the present Bell System price—I am wrong in those figures; it should be nearer 86 percent.

By Mr. Burr:

Q. That is, what should be nearer 86 percent?

A. The price formerly paid by The New York Telephone Company is approximately 86 percent higher than the price that it now secures by buying under the general contract for all of the Bell System.

Mr. McConnaughey: That is just the reverse of the other proposition?

The Witness: Just the reverse of the 43 percent, yes.

Another item of that kind is head set cabinets. Each operator has, for sanitary purposes, supplied her an individual set of receiver and transmitter and she keeps those for herself and has a particular pigeon hole in a rack provided for them.

The New York Telephone Company paid 77 cents per pigeon hole for the racks which it was using. When that article was—or I should say first, that other telephone companies not having as big a volume of these as The New York Telephone Company were paying from $1.40 to $1.70 per pigeon hole for their racks for the same purpose; when that article was standardized the price to the Bell System

dropped to 40 cents a pigeon hole, showing a saving of approximately 48 percent.

Now that is true all along the line of articles which are standard in the trade. By getting this volume you get a very substantial reduction.

Q. In the case of the head set cabinets, had The New [fol. 2631] York Company been purchasing them in the open market?

A. It had been purchasing them direct and not through The Western Electric Company, and the same is true with the silverware.

Q. And the purchases are now made for the whole System through the Western Electric Company at that saving?

A. Yes, sir.

Q. In your former testimony there was offered in evidence exhibit No. 8 comparing Western Electric Company prices on stationery to the Ohio Bell Company with the prices on similar stationery of local wholesale stationers. Do you remember that exhibit?

A. Yes; I had that exhibit made for the largest wholesalers in the City of Cleveland; they were all asked to bid on this and as I remember the study it showed a 30 percent saving in favor of the Western Electric Company's prices.

Q. That exhibit was prepared after you had asked the wholesale stationers in Cleveland to give you figures?

A. Yes, sir.

Q. Figures based on prices as they then were?

A. Yes, sir.

Q. And just as though the local wholesalers were going to bid for the business?

A. Yes, sir.

Q. Have you prepared a similar exhibit for use in this case?

A. No, sir, I did not make that study because this differential of 30 percent is exactly what I would have expected from my experience in other places, and it did not seem fair to the wholesalers to ask them to make an [fol. 2632] elaborate bid when there is obviously no chance of their getting any business, the scale of prices being so much higher.

Q. In the toll case your exhibits Nos. 10 and 11 showed certain comparisons between the actual prices paid by certain of the Associated Companies for apparatus and lead

covered cable with what similar purchases would have cost if made from other suppliers; that is, suppliers other than The Western Electric Company. Have you made a further study of that subject?

A. Yes, sir; I am accustomed to make those studies from time to time.

Q. Have you made a study based on the experience of The New England Telephone & Telegraph Company?

A. Yes, sir, I have.

Mr. Burr: It may be marked for identification as Cox Exhibit A-6, and is offered in evidence.

And thereupon the Document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted and marked Cox Exhibit A-6.

Q. Will you please explain that study?

A. This study takes up the purchases which The New England Telephone & Telegraph Company made from The Western Electric Company during the year.

Q. Where did you secure the data for this exhibit?

A. This is a summary of the items as taken from The Western Electric Company's records.

[fol. 2633] There are two classes of items considered, namely telephone apparatus and lead covered cable, both of which are manufactured by The Western Electric Company. It does not deal with any items not manufactured by The Western Electric Company.

Page 2 of the study gives the results in summarized form.

In this chart, at the head of the page, we find a general classification headed "Telephone apparatus", and under that heading there is a sub-item entitled "Items compared". This means that having analyzed all of these purchases of apparatus I was able to find certain of them, which, if not made from The Western Electric Company, might have been made from one of these other concerns, such as the Kellogg or the Stromberg Company.

Now in making that comparison I did exactly what I did in the case of the other price comparisons that I made in an earlier exhibit; that is to say, I assumed that the item could have been furnished by these other concerns even though as an actual fact the exact item was not manufac-

tured by any other concern than The Western Electric Company.

But in every case I have been fair; that is to say I have included under the item compared only those where it could be conclusively stated that no unfairness had been done to the independent manufacturers; if there appeared to be any element of unfairness the item was removed from that classification and put into the next, which is here entitled "Items not compared".

[fol. 2634] Now of items found to be comparable, the amount purchased represented 27 percent of the entire purchases, and in dollars amounted to $2,482,188.00.

The lowest price of competing manufacturers was found to be $3,154,468.00, showing a saving under the supply contract of $672,280.00, or 27.08 percent.

Q. The amount of $2,482,188.00 represents what prices?

A. Those are the actual prices paid by The New England Telephone & Telegraph Company to The Western Electric Company.

Q. Proceed?

A. Coming now to the specification of Items not compared, it is found that this represented 52 percent of all purchases, and amounted in dollars to $4,749,076.00.

I have taken as the lowest competing price of similar items exactly the same figure; that is, $4,749,076.00.

Q. Why did you do that?

A. I did that to be absolutely fair. In the case of the items which could be compared I found there was a differential of 27.08 percent. Now in making that I used the lowest quoted prices of these competing companies and applied thereto the maximum quoted discounts. It is probable, however, that in the case of items not sold by code number but sold in an assembly, a completed switchboard built under contract, for example, that these prices would be somewhat shaded.

The comparable bids between The Western Electric Company and the independent manufacturers shows that if such shading is done by the independent manufacturers it would [fol. 2635] be in the order of, we will say, 10 percent. So that in order to be more than fair in items not compared, if by any chances I have been unfair in items which I have compared, I have taken the non-comparable items at exactly the same price as the actual Western Electric Company price.

These items which are not compared are all classified at the foot of the form. For example, you will see one item there called "Restricted apparatus", 603,000 dollars and over; that represents items such as load coils and repeaters and other items which are not manufactured by these other concerns because the patent rights lie exclusively with the Bell System and the products are restricted for use within the Bell System.

Q. Just a moment. Does that 10 percent which you have referred to as having been allowed in order to be entirely fair apply to any other of your exhibits?

A. Why, yes, I think that could be applied in part to Exhibit A-2, showing comparison of a bill of goods. In that case the prices that I have used are the lowest quoted prices from which the maximum discounts are taken, and if sold in assembly there might be a shading. I want to state, however, that any shading which is made relates to the initial installations. In other words, having established a standard in a certain locality the independent manufacturing companies will then price additions to that board at a higher rate, and if the items are bought piecemeal, such as the equipment to fill up spare places in the board, they will be bought at this higher rate, which is the rate that shows [fol. 2636] in Exhibit A-2. In other words, it is to only a portion of their sales that any reduction of the order of ten percent would apply. It is not to the general sales.

Now these other manufacturers sell their goods F. O. B. their factories, which are located respectively at Chicago and Rochester, New York.

The Western Electric Company, however, furnishes its goods to the Associated Companies F. O. B. destination. The result is that there is a freight differential which must be added to the price of the competing manufacturers in order to put their products on a par with The Western Electric Company's prices.

Q. That is for the purpose of this comparison?

A. That is for the purpose of this comparison.

Q. Proceed.

A. Now that freight here is taken at the estimated weight of equipment totalling this combined sum, that is, items compared plus items not compared, at the actual freight rates, whether the item was shipped theoretically from the Kellogg Company or from the Stromberg-Carlson Company, and those freight charges are added to the cost of

the prices of the competing manufacturers. Furthermore, if The New England Telephone & Telegraph Company had not been buying under the standard supply contract it would have had to maintain its own purchasing department and its own warehousing department, and in that event the costs for purchasing and warehousing would certainly have equalled the rate of remuneration which the New England Company was paying in the year 1923 to The Western Electric Company for making purchases and [fol. 2637] direct shipments from the manufacturers to the New England Company.

The rate at that time was four per cent, and I have taken four percent as a fair measure of the expense of purchasing and warehousing, which applies against or in addition to the prices of these competing manufacturers.

Summing up now both classes of apparatus, that is, items compared and not compared, including allowances for freight and purchasing and warehousing, we have these totals:

Actual, paid to The Western Electric Company, $7,231,-264.00;

Lowest prices of competing manufacturers, including freight and purchasing, $8,207,585.00;

Showing a saving under the supply contract of $976,-321.00, or 13.50 per cent.

Q. That applies to the saving on telephone apparatus?

A. Yes, sir.

Q. What have you to say with respect to the savings on lead covered cable?

Mr. Postle: One minute; what about your freight differential? Did you specify a freight differential there?

The Witness: Of course that is a figure that is clearly an estimate.

Mr. Postle: I understand.

The Witness: And I made my estimate in this way; I took the shipments that were made by The Western Electric Company from its factory at Hawthorne, which is a suburb of Chicago, and I found the total weight of those shipments, [fol. 2638] so I related the total dollars sold to the total weight shipped. In that way I get at the amount of weight per hundred dollars of shipment and then I applied the actual rates to this weight.

Now a similar process was followed in the case of lead

covered cable, but in this case all of the cable bought was found to be comparable. It amounted to 20 per cent of the total purchases and amounted to $1,852,479.00 actually paid The Western Electric Company.

The lowest price of a competing manufacturer was found to be $2,170,362.00, showing a saving under the supply contract of $317,883.00, or 17.16 per cent.

Cable is sold by all manufacturing concerns F. O. B. factory.

The cable manufactured by The Western Electric Company was actually made at Hawthorne just outside of Chicago, whereas the lowest competing concern was located at Providence, Rhode Island, and therefore the freight differential applied against The Western Electric Company.

The actual freight in this case is very closely estimated because the weight was known and the freight was none. So we have the freight added to The Western Electric Company price amounting to $69,701.00, and the corresponding freight short haul from Providence on the competing manufacturer was found to be $20,847.00, showing a differential in the case of freight of $48,854.00 operating against The Western Electric Company's prices.

By Mr. Burr:

Q. Suppose that the lead covered cable had been sold to [fol. 2639] The Ohio Bell Telephone Company and delivered to Ohio instead of to the New England Company, in what respect would the savings have been changed?

A. The freight included in The Western Electric Company's price would have been less and the freight included in the competing manufacturers' price would have been more than those shown in this exhibit. The net differential I believe would have shown in favor of The Western Electric Company instead of against The Western Electric Company as in this exhibit.

Q. Now this comes about on account of the particular location selected for the use of this exhibit or for the purpose of this exhibit?

A. Yes, sir. I might say that while other manufacturers of lead covered cable were of course included in ascertaining which manufacturer was the lowest, the difference in price was so much greater than the difference in freight that we would still use the same manufacturer as the lowest manufacturer price.

The total for this classification of lead covered cable is therefore found to be $1,922,180.00 actually paid The Western Electric Company, or for freight; whereas the lowest price of a competing manufacturer, including freight, would have been $2,191,209.00, showing a saving applying to lead covered cable of $269,029.00, or 14 per cent.

The grand total for all classifications including adjustments shows that The Western Electric Company's price was $9,153,444.00, and the lowest price from competing manufacturers would have been $10,398,794.00, showing a [fol. 2640] saving under the supply contract of $1,245,350.00, or 13.61 per cent.

Q. And that is on the basis of considering the prices for all non-comparable items as the same for both the Western Electric Company and competing company manufacturers?

A. Yes. It also assumes that in the case of such items as I illustrated with apparatus this morning, taking the No. 92 jacks, that it would have been possible to have taken a strip of Kellogg jacks, if they were the lowest of the competing items, and used with them the lowest plug, Stromberg or other manufacture—although the two actually would not function together, and would not function with any Western Electric Company apparatus that was already installed in the switchboards of the company.

Q. What is represented by the last seven pages of your exhibit A-6?

A. These pages give the detail of the items actually found to have been purchased. It shows in each case the quantity involved and the total prices which were paid to The Western Electric Company; then it shows the corresponding price of the other companies which were considered as competing with The Western Electric Company.

In each case of these other manufacturers you will find some one item marked with a star; that indicates that that item was the one selected as being the lowest of the competing prices.

If, instead of taking the lowest price of any of the competing concerns, I had taken all of the Kellogg items as a group or all of the Stromberg items as a group, the percentages shown as in favor of The Western Electric Company's [fol. 2641] price would have been raised.

There is a little table on the eighth sheet of the exhibit that shows what the result would have been had that method been followed.

Q. Let us see about that. You are now referring to the table appearing at about the middle of the page, of page 8?

A. Yes, sir. Now take just one item as illustrating what that table shows.

We actually found the items manufactured by the Kellogg Company comparable to items for which The Western Electric Company charged $2,370,530.00. Now had Kellogg furnished those items, the Kellogg price would have been $3,084,511.00; showing that the Kellogg price was 130.12 per cent of The Western Electric Company price. Similarly, we find Western Electric items amounting to $2,322,099.00, for which there were comparable Stromberg items, which, at the Stromberg price, we find amounted to $3,337,881.00, showing 143 per cent of The Western Electric Company price.

Q. I notice that among the companies listed in the exhibit is The Cook Electric Company; what is that company?

A. That is a company with headquarters at Chicago; it manufactures a limited line of supplies which are comparable to those manufactured by The Western Electric Company. This particular Company's product is sold by the Kellogg Company, but there is a slight increase in price if bought through the Kellogg Company; so that instead of using Kellogg Company price we have gone back to the [fol. 2642] manufacturer himself and in that way got a slightly lower price, which has been used in this study.

Q. Does the same thing apply to The Reliable Electric Company, also mentioned in the exhibit?

A. Yes, sir, the same principle.

Q. Have you prepared a similar exhibit showing a study for the Chesapeake & Potomac Telephone Company of Baltimore City?

A. Yes, sir, I have. (Producing same.)

Mr. Burr: It may be marked for identification as Cox Exhibit A-7, and is offered in evidence.

And thereupon the Document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted and marked Cox Exhibit A-7.

Q. Will you please explain the exhibit?

A. This exhibit deals with purchases of apparatus and lead covered cable by The Chesapeake & Potomac Com-

pany of Baltimore City purchased from The Western Electric Company during the year 1923. This is the Associated Company operating in the State of Maryland.

The study was made in all respects similar to the study given in the preceding exhibit. The results can be given in total I think instead of detail.

For telephone apparatus it was found that the actual prices paid The Western Electric Company amounted to $806,278.00. The lowest price of competing manufacturers would have amounted to $903,618.00, showing a saving [fol. 2643] under the supply contract of $97,340.00, which is 12.07 per cent.

For lead covered cable the actual purchases from The Western Electric Company amounted, including freight, to $210,402.00.

Comparable competing prices would have been $241,380.00, showing a saving under the supply contract of $30,978.00, or 14.72 per cent.

Making the grant total of actual purchases from The Western Electric Company $1,016,680.00.

The lowest price of competing manufacturers $1,144,998.00, showing a saving under the supply contract of $128,318.00, or 12.62 per cent.

The detail supporting sheets and schedules are those comparable to the other exhibit.

Q. Continuing with your Exhibit A-7, and calling your attention particularly to Sheet No. 5, which has a comparison at the bottom similar to that on page 8 of your Exhibit A-6, will you explain to the Commission the difference between that comparison and the one shown on Sheet No. 2 of Exhibit A-7?

A. This table at the foot of page 5 shows what the result would have been if we had dealt with just one manufacturer, so far as his line permitted us to deal with him. And by "us", of course I mean here The Chesapeake & Potomac Company.

For example, it was found that there had been bought from The Western Electric Company apparatus to the amount of $317,758.00, for which there were items comparable in the Kellogg line. If these items had been pur- [fol. 2644] chased from Kellogg the price would have been $387,979.00, which is 122.10 per cent of The Western Electric Company price.

Q. And so on down through the exhibit?

A. And so on down through the exhibit, yes, sir. Now those prices, or those differentials, you will note are all higher than the differential which has been used on page 2 of the study for items compared. The differential there is shown to be 17.30 per cent, which is the result of taking the lowest of any of these competing manufacturers.

Q. In other words, Column D combines the lowest prices of all of these competing manufacturers?

A. Yes, sir, regardless of the fact that the items are not designed to function together and, as a matter of fact, in many cases would not function together.

Q. Have you prepared an exhibit showing a study of the cost of telephone supplies for The Chesapeake & Potomac Telephone Company of Virginia, for the year 1924?

A. Yes, sir.

Mr. Burr: It may be marked for identification as Cox Exhibit A-8, and is offered in evidence.

And thereupon the Document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted and marked Cox Exhibit A-8.

Q. Explain it, if you please?

A. This exhibit covers purchases by The Chesapeake & [fol. 2645] Potomac Telephone Company of Virginia from The Western Electric Company during the year 1924 for telephone apparatus and lead covered cable. The total actual purchases, including freight, amounted to $586,828.00. The total items found to be comparable were 27 per cent, and the per cent saving on those items was found to be 21.50 per cent.

Mr. Burr: Now, unless the Commission wants us to we will not go into the detail of this exhibit.

Q. I will ask you whether or not the exhibit has been prepared on the same general basis as that of your Exhibits A-6 and A-7?

A. Yes, sir, it follows exactly the same principle as the other exhibits. It simply deals with a different company and a later year. This happens to be the only study for that year that I have made.

Q. Now you say that in making up these three exhibits

A-6, A-7 and A-8 you have used the actual prices of the manufacturers including The Western Electric Company, the Kellogg, the Stromberg and the other two smaller ones?

A. Yes, sir.

Q. Where did you get the amounts of these total supplies which you have used; for example, do these figures represent the actual purchases by The Chesapeake & Potomac Telephone Company for the year 1924?

A. Yes, sir, they do; there is this one qualification that I would make that applies equally to the other exhibits.

In the case of the purchase of a switchboard, the payments are not made all in one year—I mean all at one time. The arrangement for this year under consideration [fol. 2646] was that a portion—I forget the exact portion at this minute—was paid when the first major shipment was made of the switchboard. Then another portion—the first was 50 per cent; the second portion was 25 per cent, made two months later, and then another 20 per cent would be made when the board was ready for service, and the final five per cent would be made when the board was cut into service.

Now the question arises, How are you going to treat switchboards where the shipment was made one year and continued into the next year? That is the only exception to the statement that these purchases related particularly to one year. What I had to do was simply to take the switchboards which were completed in this year, even though the payments had started in a prior year. But in every case I have taken the corresponding dates for the payments by these other concerns or the prices by these other concerns.

Q. Did you give the grand total for Exhibit A-8?

A. No, sir, I did not.

Q. Will you please do that?

A. The total purchases amounted to $586,828.00. Lowest competing price was found to be $702,216.00, showing a saving under the supply contract of $115,388.00, or 19.66 per cent.

I should make a general statement in regard to all three of these exhibits, that I believe the prices which I have used here are minimum prices; if anything they are too low.

The method of using items which could not be com-

pared by price at exactly the same price for competing [fol. 2647] concerns and by The Western Electric Company is more than fair, and the result is that these prices are minimum prices and I think they are too low at that.

Q. Have you prepared a chart similar to your former Exhibit No. 12 in the toll case showing the comparison between actual costs of telephone apparatus and lead covered cable to the Associated Companies by The Western Electric Company?

A. Yes, sir.

Q. Under the standard supply contract?

A. Yes, sir, I have.

Q. Compared with the lowest prices of competing manufacturers for similar material?

A. Yes, sir.

Mr. Burr: It may be marked for identification as Cox Exhibit A-9, and is offered in evidence.

And thereupon the Document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted and marked Cox Exhibit A-9.

Q. Will you explain the exhibit, please?

A. This exhibit summarizes the results of the studies which I have made on purchases by The Associated Companies, taking at least a year at any one time. It is fairly self-explanatory. However, to make it perfectly clear, I will take the latest item showing at the foot of the form.

We have here, under the column "Year", the year 1924; following that, the name of the company, The Chesapeake [fol. 2648] & Potomac Telephone Company of Virginia.

That means that the purchases made during the year 1924 by The Chesapeake & Potomac Company were studied and this particular study is the one that has just been introduced as Exhibit A-8. The summary of the amounts and percentages are those which I just gave for the record; showing a per cent saving under the supply contract of 19.66 per cent.

This exhibit does not include all of the ones that I have made. There were some that were of a shorter period and did not justify putting them into the list. However, the percentages of saving were in no case less than the ones I have shown here. These earlier studies, those back of the

year 1918, were not made in the first instance by me. But I referred to the original data and compilations and checked them so that I can state that they were correctly prepared.

Q. What is shown by the first half of the sheet?

A. The upper half of the sheet shows the percentage savings as given in the extreme column on the right of the lower half. In every case the price of The Western Electric Company is taken as 100 per cent, and the adjacent bar, or column, it should be—the adjacent column shows in proper relation thereto the price of the lowest competing manufacturer.

Q. In your former testimony in the toll rate case, in the case of Exhibits 13, 14, 15 and 16, you made comparison of actual purchases of independent telephone companies [fol. 2649] with what the same or similar supplies would have cost if made by one of the Associated Companies, such, for instance, as The Ohio Bell Company, under the supply contract; have you made any further studies of that kind?

A. No, sir, I have not. Obviously I could not make further studies on the Companies that were included in the prior list because they had been absorbed by the Bell Companies and had passed out of existence. But there have been some further consolidations, and those I have not yet had the opportunity of studying. Most of them which have been made were so small as not to be significant, but there are some comparatively large companies and those I propose to study as soon as the opportunity presents itself.

Q. In your former testimony in the toll rate case there was introduced in connection with your evidence Exhibit No. 17, showing the relation of materials and supplies to Company stations held by Class A telephone companies, which were not Bell controlled and did not have the supply contract with The Western Electric Company. Have you any further data of the same kind; that is to say, of the same general kind?

A. Yes; I am accustomed each year to draw off from the sworn reports of these companies to the Interstate Commerce Commission the facts as to their supply situation, and the average amount of supplies held by those companies per station is upwards of one dollar higher than the amount of supplies held by The Ohio Bell Telephone Company.

Q. How does that come about, if you know?

A. It comes about by reason of this general advantage, to the Bell Companies of dealing with The Western Electric [fol. 2650] Company under the supply contract; that is to say, the amount of supplies which the Telephone Company must carry itself is substantially reduced.

Not only were the central warehouses and the stocks therein bodily taken over by The Western Electric Company when these contracts were first established, but the amount of supplies which must be held locally is diminished by reason of the efficiency of The Western Electric Company service.

Mr. McConnaughey: Does the difference in price enter into that?

The Witness: Yes, the difference in price would enter into that.

Mr. McConnaughey: You did not mention that.

The Witness: It is just the total inventory value of the supplies in stock divided by the total number of stations reported on the reports.

Mr. McConnaughey: What is the corresponding figure for The Ohio Bell Telephone Company?

The Witness: I have not made that adjustment but it would cut it down 25 or 30 per cent, something like that.

Mr. McConnaughey: I find a pencil memorandum on that exhibit "$2.08"; might that be the figure? It is not marked; it is just there on that same sheet.

The Witness: I think that $2.08 would have been the supplies in stock of The Ohio Bell Telephone Company as of that date.

[fol. 2651] Mr. McConnaughey: Well, that is what you are comparing this with?

The Witness: Yes; as I recall it, that was the amount of supplies held per station by The Ohio Bell Telephone Company.

By Mr. Burr:

Q. What was the amount of supplies?

A. $2.08 per station.

Q. By The Ohio Bell Telephone Company?

A. Yes, sir.

Q. And how did that compare with the amount per station held by the Class A telephone companies?

A. Well, at that time it was less by something over $1.50.

Q. What was less?

A. The amount held per station by The Ohio Bell Telephone Company. I have minimized that figure by a general average by bringing it down to a dollar as a by and large figure to use in matters of this kind.

Q. How extensive is the storage and distributing system of The Western Electric Company today?

A. The Western Electric Company has today two centers of manufacture, one at Hawthorne near Chicago, and one at Kearney, which is near New York. Both of these manufacturing establishments have central warehouses connected therewith.

In addition there are 32 distributing houses established throughout the United States at centers best adapted to serve the needs of the Associated Companies.

For example, there are within the State of Ohio two distributing houses, one at Cleveland and one at Cincinnati. [fol. 2652] There are adjacent to this territory distributing houses at Detroit, Pittsburgh, Louisville, Indianapolis, and a distributing house at Chicago in addition to the major warehouse at Hawthorne.

Q. What is kept in these warehouses and what is distributed from them?

A. The warehouses associated with the manufacturing plants hold exclusively supplies, apparatus and cable manufactured by The Western Electric Company itself. The volume of those supplies would run about $20,000,000.00 to $25,000,000.00 continuously.

Q. Held where?

A. At Hawthorne and at Kearney. The supplies held at the distributing houses embody both the product of The Western Electric Company and supplies which are purchased by The Western Electric Company from other manufacturing concerns. Those supplies would run between $15,000,000.00 and $20,000,000.00 continuously.

When I last testified I did not refer at all in my statement of supplies to the amount held at the manufacturing store houses. I referred merely to the distributing houses; so that the total amount of supplies held at Western Electric Company storehouses would run between $35,000,000.00 and $40,000,000.00 continuously.

In addition to that there are stocks established, paid for

by The Western Electric Company and established at suppliers furnishing crossarms and conduit and wire, etc., supplies not manufactured by The Western Electric Company; these stocks being maintained to facilitate direct shipments and in that way to avoid warehousing charges at [fol. 2653] The Western Electric Company's distributing houses, all of which is in favor of the Associated Companies.

So that you can say that there is currently available for shipment to the Associated Companies, ready for immediate shipment, that is, not less than $35,000,000.00 worth of supplies, running up to more than $40,000,000.00 worth of supplies, and all of that is made available to The Ohio Bell Telephone Company if the need for it should arise in this territory.

Q. In your former testimony you called attention to the peculiarly valuable service rendered by The Western Electric Company in times of emergency, and I think you there named some specific instances; can you give any examples of more recent instances of that kind?

A. Yes, sir, I can. I have two typical instances that I should like to mention of fire damage. One was at Lyndonville, Vermont.

Q. After the date of your testimony in the toll case?

A. I find it is just prior to that testimony but was not in hand at that time; I did not have the data then.

Q. Proceed.

A. The date of this fire was January 22nd, 1924. The fire occurred at midnight and at about one o'clock A. M., the next morning, The Western Electric Company was notified at Boston as to the requirements. This amounted to an 800 line board, four operators positions, and of course all of the equipment connected with it; that is to say, the power plants and frames and racks, etc.

All of that equipment was in stock at the distributing house and although this report came in shortly after mid- [fol. 2654] night the necessary equipment was completely loaded ready for shipment that morning and left by the first train, which was 9:30 A. M. It was several hours ahead of that time actually loaded in the cars. The shipment was received at 5:30 P. M. of same day and was cut into service——

Q. Received where?

A. Received at Lyndonville at 5:30 P. M. of same day and was cut into service two days later by 30 equipment

men who had been assembled from various parts of the New England Company's territory.

It might be noted that this being standard equipment, and all of these men being accustomed to work with standard equipment, they were able to immediately take charge of this work and complete it in a period of less than two days from the time the fire commenced.

Q. If you have one more instance of that sort of thing you may give it.

A. I have a comparatively recent instance of which I have not yet been able to have the complete story; I have merely the estimates which were made by The Western Electric Company.

I would like to refer to this because it is a special case, involving a large board and a board which was quite special in its characteristics.

This fire occurred at Lake Charles, Louisiana, December 1st, 1925, involving 30 operators positions, with rather an elaborate special and toll system; that is to say, not only involved telephone toll lines but also telegraph lines.

The first notice of the fire was sent the day of the fire [fol. 2655] to The Western Electric Company at Hawthorne, and that same day The Western Electric Company shipped two sections of switchboard, and with it the associated equipment, which amounted to a total weight of 5000 pounds; that is exclusive of the boards themselves.

The next day they shipped four more sections, and portions of 14 more sections, and with it the associated equipment which amounted to some 10,000 pounds more.

On December 4th, that is the third day after the fire, the first notice was received by The Western Electric Company as to the requirements for the new offices.

Of course the office had first to be located, and this switchboard being so large, 30 operators positions, and its unusual requirements, meant that it had to be engineered particularly for the location.

In spite of that there were shipments made on the 4th and 5th and 6th. I will not take the trouble to detail that, but altogether these 30 operators positions, with the power plants, the desks, the racks, and all the other features of the equipment, were shipped complete in five days, the minor items alone weighing approximately 100,000 pounds.

That equipment arrived at Lake Charles between December 2nd and December 8th, the fire having occurred Decem-

ber 1st. I don't know the time that it took to cut it in. That information has not yet been received, but it illustrates the possibility of having major fires taken care of immediately, in spite of the fact that special equipment is involved. [fol. 2656] Q. How many subscribers were represented by those 32 boards, if that is the correct number?

A. I haven't that figure, but it is safe to say that it would average at least 200 subscribers per board.

Q. Will you tell the Commission briefly of the situation with respect to the Missouri-Illinois sleet storm which occurred on December 18th, 1924?

A. This storm is particularly noteworthy because it is the most severe storm ever encountered by the Bell System. It started south of St. Louis and extended in a general northeast direction, covering an area of about 100 by 1000 miles. The damage done was briefly as follows—

Q. Just a moment; have you an exhibit on that subject?

A. Yes, sir, I have (producing same).

Mr. Burr: It may be marked as Cox Exhibit A-10, and is offered in evidence.

And thereupon the Document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted and marked Cox Exhibit A-10.

Q. Now you may proceed.

A. For example, the total poles down amounted to 65,300. That represents the equivalent of 1600 continuous miles of pole lines. The estimated cost of reconstruction exceeded $4,900,000.00.

This damage was so extensive that it was impossible for the two distributing houses which were mostly concerned, [fol. 2657] that is those at Chicago and St. Louis, to make all of the shipments; but I have recorded here the shipments that were made by those two houses alone within the first two weeks following the storm.

Just to name a few of these items, we have bare copper wire amounting to 2,243,000 pounds. Now that represented 67 per cent of the estimated annual shipments from both of those houses for that year.

The twisted pair wire, which is another exceedingly important item in connection with a storm damage of this

kind, amounted to 7,439,000 feet, representing 13 per cent of the annual requirements for those two distributing houses.

The other figures on the exhibit will speak for themselves.

In addition to those two distributing houses making shipments there were six others, those being listed here, and they were the ones that were most closely related to this territory involved. The shipments that were made were not anything like as extensive as those that are indicated by the figures preceding them in this statement, and more could have been furnished from those houses if it had been required.

There were, in addition, 23 distributing houses still more distant from which no supplies were withdrawn at all.

Now the rapidity with which these shipments went out deserves special note.

For example, there was a total shipped of bare copper [fol. 2658] wire of 3,500,000 pounds, representing 75 cars, shipped by suppliers on the average of one day after the order was received.

Q. To whom do you refer by the term "suppliers"?

A. That refers either to The Western Electric Company itself or to its suppliers from whom the wire was purchased in the first instance. In other words, the advantage is always taken of shipping direct from the factory if the delay incident to such shipments is not important and if the volume is sufficient to justify such shipments. In this case the local shipments took care of the immediate needs and these shipments from the factories came in as supplemental thereto.

Lead covered cable was furnished to the extent of 19,000,000 conductor feet the same day that the order was received by The Western Electric Company, although lead covered cable is not an item which is supposed to be kept in stock.

Creosoted yellow pine poles were furnished to the amount of 24,000. That represents 500 cars, which were shipped by the suppliers in from one day to four days after the order was received.

Now another feature requires special notice. It is not enough merely to put these shipments on a loading platform and turn them over to the transportation company. They must be specially cared for in order to expedite their

transportation. It happens that The Western Electric Company has a centralized bureau for handling its traffic both [fol. 2659] inward and outward, and the importance of that bureau is such that it was enabled to present the needs of this emergency in forceful manner to the transportation companies which are involved and to make special arrangements for the transportation of these supplies. That meant the special allocation of freight cars, special arrangements for stopping through trains at local points to take up or to discharge or to make junctions with other roads. Every car shipped was traced through day by day and the progress of the cars telegraphed to the destination so that at all times the Telephone Company was kept in touch with the situation and it knew exactly when the material would arrive and could schedule its work in accordance therewith.

Another feature which is peculiar to the Bell System was the fact that all of this material was standard inspected material, ready and standard for immediate installation, and that the forces of other telephone companies could be drawn on, other Bell System companies that is, could be drawn on to assist the local forces in repairing the damage. In this way experienced foremen and linemen to the number of 1938 were sent in to the storm area from other sections of the country; that is, from 13 other States, as far east as Massachusetts and as far south as Georgia, all of whom were enabled to start work in a standard manner as soon as they arrived at the scene of the damage, and the material was there ready for their service.

Without a supply system of this magnitude, not only would there have been very serious delay to the telephone [fol. 2660] company representing loss in revenue, but the service of the community would have been very seriously interrupted for a protracted period.

Q. Do you know how long it took to clean up that situation?

A. I haven't that data with me, but the emergency material that is required to restore the service was such that the restoration of service itself was very prompt. The restoration of permanent plant is a matter that comes along in accordance with the most economical procedure.

Now there is no storm that could take place here in Ohio that would strain the resources of the System more than that storm did in this instance.

Q. In order to shorten your testimony, there are certain other statements contained in your Exhibit A-10 to which you have not referred. Tell the Commission whether or not the statements contained in the exhibit are true to the best of your knowledge and belief?

A. Yes, they are.

Q. Is the same thing true with respect to your other exhibits?

A. Yes, sir.

Mr. Postle: Is it your claim, Mr. Cox, that these emergencies that you have spoken of in detail, with respect to the two fires and this storm in Missouri and Illinois, could only have been met by reason of The Western Electric Company being so equipped and that no other competitors could have taken care of the emergency?

The Witness: I do not think any other competitors could [fol. 2661] possibly have taken care of this sleet storm. Other competitors would have made a good showing, we will say, in the case of these other fires. They were not such as to strain the resources of the System, but they are typical as showing what can be done and what is being done currently.

I have taken occasion to investigate the service that was rendered to independent companies to see whether they also got their supplies promptly.

I had reports from 19 independent companies in which the Bell System owned no stock whatsoever in the State of Missouri, and the service did not, in general, compare with the service that is indicated by this exhibit.

Commissioner Poor: Mr. Cox, is there any provision in this supply contract, or outside of the supply contract, whereby when, in case of emergency, the Western Electric is called upon for supplies and they cannot supply them and the Associated Company goes outside and has to buy it at a higher figure, that they are reimbursed the difference between what they pay for it and what they would have gotten it for from The Western Electric Company?

The Witness: No, sir, there is no such guarantee. The fact merely is The Western Electric Company is currently meeting the requirements and that it has done at the standard price; it is done at the contract price. There is no increase in the charge by reason of emergency services involving overtime which was incurred throughout the period

of all of these cases that I have introduced into the record. [fol. 2662] Commissioner Poor: You gave an illustration this morning of the New England Company having to get some lead covered cable or something where they had to go out and had to pay a higher price for it because The Western Electric Company could not supply them; were they reimbursed anything for that difference?

The Witness: No, sir, there is nothing in the contract that covers a case of that kind. The Western Electric Company makes every effort to meet the requirements, the situation being this; annually each of the Bell System Companies prepares a program for the ensuing year and reduces that to certain factors, which, when passed to The Western Electric Company, can be used by it in determining the amount of supplies that will be required.

Now it takes a considerable period to build a new factor, and the demand that came in these last few years was so great that it was entirely unlooked for; it was far beyond the estimates of the telephone companies themselves. If the telephone companies had given estimates sufficiently in advance to have enabled The Western Electric Company to build the factories in time, they would have been built. As soon as this demand came on The Western Electric Company they started plans for an additional factory, which is partially in operation, at Kearney, and is being rapidly completed. But there wasn't the opportunity given to The Western Electric Company to make those plans sufficiently in advance to meet the demand. That is as far as the obligation goes. If the telephone company will make its [fol. 2663] demands known and those demands will have any assurance of a definite requirement, The Western Electric Company will meet the issue. But obviously it cannot meet something that is entirely beyond the experience in the industry to that date. And that was the fact in the case of the manufacture of lead covered cable.

By Mr. Burr:

Q. You referred to it just a moment ago, but I will ask you again, what extra charge does The Western Electric Company make to the Associated Companies, if any, because of overtime and other extraordinary conditions in making shipments for storm and fire damage?

A. There is absolutely no additional charge made except-

ing that the Telephone Company pays the outgoing charge from a distributing house to the destination. Now if that were made by express instead of by freight, there would be no express charge. But so far as The Western Electric Company's own expenses are concerned there is no charge whatsoever by reason of overtime.

Mr. McConnaughey: They always pay the transportation charges?

The Witness: They always pay the transportation charges; that is it exactly; and they are an excess charge to the Telephone Company, but not under the contract.

By Mr. Burr:

Q. Does the Department of Operation and Engineering of The American Company maintain a map to show the conditions as to the expectancy of sleet storms throughout the United States?

A. Yes, sir, it does.

Q. Have you a photograph copy of that map with you? [fol. 2664] A. Yes, sir.

Mr. Burr: It may be marked for purposes of identification as Cox Exhibit A-11, and is offered in evidence.

And thereupon the map last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted and marked Cox Exhibit A-11.

Q. Will you explain the key to the map?

A. In order to economically design telephone plant, its strength must be related to the loads which it is to encounter. Inasmuch as sleet is an important bearing on the load which a line will have to stand, it is important to a plant engineer to know whether any particular line will be subject to a sleet storm hazard.

In order that accurate data may be available in this matter the engineering department of The American Telephone & Telegraph Company has made arrangements with all of the Associated Companies by which the occur-ence of sleet storms is currently reported to the engineering department. The requirements for this report are carefully worked out so that the degree of intensity of the storm is governed by measurements and not by the judgment of the observer.

For example, the thickness of ice that forms on the wire is a controlling feature.

All of this data is transmitted to New York and is there [fol. 2665] analyzed on this basis:

The storms which have the greatest intensity, ice forming up to, say, three inches in diameter on the wires, are set forth and the occurrence of those storms over a period of years is noted. The records of these storms go back 20 odd years and the number of times that a storm of this maximum intensity has occurred in those 20 years is divided into the number of years covered by the record. In this way the average period during which one of these storms may be anticipated is determined; and on a large map there is inserted a pin, the head of which is marked to indicate a storm of this intensity occurring at a particular period of years; that is located at the point of the location of these storms.

Similarly, storms of other intensities or storms occurring at other intervals are recorded by appropriately designated pins.

These pins are so chosen that a photograph of the map will indicate, by the depth of the shading, the intensity of the storms. You will therefore be able to see from this photograph that the area of the Ohio Bell Telephone Company is in the intense sleet storm belt, and that undoubtedly will coincide with the records of the people in this territory. The storms are to be anticipated at frequently recurring intervals in this territory.

I took occasion recently to review the originating data on these storms and to check them with the map, so that I might be assured that the map was accurately recording [fol. 2666] the facts, and I found that was true.

Q. Have you had occasion to study the results of the so-called Lorain storm, which occurred in the latter part of June, I think it was, of 1924?

A. No, sir, I did not study it at all.

Mr. McConnaughey: Let me ask you a question right there; where did you put the pins for this Illinois and Missouri storm?

The Witness: The Associated Company has its observers scattered through its territory so that each man tells of the conditions at his location, and the pins are put on his location in accordance with the intensity there. So that this

particular storm would merely be one of a series in that territory and it would tend to darken the intensity over that area.

You might notice that the map which I have here is an earlier edition of the same map. It won't look exactly like the one which I have introduced in evidence because this last map has further accumulated data embodied in it.

By Mr. Burr:

Q. From the studies you have made are you in a position to estimate the savings to The Ohio Bell Telephone Company through purchasing from The Western Electric Company under the standard supply contract?

A. Yes, sir, I am.

Q. For the year 1925?

A. Yes, sir.

Q. Will you please do so?

A. In making such an estimate I would take the total supplies manufactured by The Ohio Bell Telephone Company [fol. 2667] during the year 1925 and divide it into three classes, namely, apparatus manufactured by The Western Electric Company; lead covered cable, and supplies not of Western Electric Company manufacture. Making that classification, I have the following:

The purchases of apparatus amounted to $5,219,605.00. The exhibits which I have introduced show that a saving of at least 13 per cent is made on apparatus. Applying that percentage to these purchases results in a figure of $678,549.00.

Q. For apparatus?

A. As the amount saved through the contract for apparatus of Western Electric Company manufacture.

Similarly treating lead covered cable, we find the total purchases amounted to $1,308,111.00. The saving on that may be taken at 14 per cent, and the amount saved is the product of those last two factors, and amounts to $183,136.00.

On items not of Western Electric Company manufacture the total purchases amounted to $2,493,482.00. A saving of approximately eight per cent is made on those items and the amount saved is therefore determined to be, for the year 1925, $199,479.00.

The grand total of all purchases amounted to $9,021,-

198.00; the average saving may be taken at 12 per cent and the total amount saved at $1,061,164.00.

Now those savings do not take into account savings other than those of price; they do not consider any savings through reduction in the amount of supplies carried; [fol. 2668] to the fact that the inspection is better and cheaper performed under the supply contract——

Q. Then what—better performed under the supply contract than what?

A. Than if the Telephone Companies had to do the work for themselves, or that emergency service is rendered at normal costs.

In view of that fact I estimate that it is conservative to say that the saving during the year 1925 to The Ohio Bell Telephone Company through the operations of this supply contract exceeded $1,000,000.00.

Q. Does your testimony as to the service under and the benefits from the supply contract taken at this time and also in the toll rate case apply alike to the exchange and toll requirements of The Ohio Bell Telephone Company?

A. Yes, sir, it does.

Q. I think you were asked that in the toll case, but I wanted to make sure of it. Now in order to cover any possible omission I will ask you whether or not the facts and figures covered by your testimony, including the exhibits, are true to the best of your knowledge and belief?

A. Yes, sir, they are.

Mr. Burr: You may cross-examine.

[fol. 2669] Cross-examination.

By Mr. McConnaughey:

Q. Are you a part of the General Staff organization?

A. Yes, sir, of The American Telephone & Telegraph Company.

Q. What is your title?

A. Assistant Vice President.

Q. In what department are you employed?

A. In the Department of Operating and Engineering.

Q. In this new contract, Exhibit A-1, I want to ask you a little further about some of these provisions, with reference to "the price, which is to be as low as that paid

under comparable conditions by the Electric Company's most favored customers". In the application of that term do you find conditions differing between different Associated Companies which justify a difference in prices to the different Companies, aside from freight differences?

A. The arrangements there do justify differences in prices in this respect; take your two classes of commodities, those manufactured by The Western Electric Company on the one hand and those not manufactured by The Western Electric on the other; so far as The Western Electric Company's manufactures are concerned the price is the same for all of the Associated Companies regardless of their location.

So far as the supplies not manufactured by The Western Electric Company are concerned, you have the situa- [fol. 2670] tion that there may be, and generally are, several manufacturers making the same line of goods, all of which are under contract to The Western Electric Company.

That is done for a number of reasons. The prices may not all be the same, but the service is protected better by having several suppliers than by having one, even though one might be able to supply the entire demand for the Bell System.

If the prices are different you may find that the supplier for The Ohio Bell Telephone Company is one concern and the supplier for The New York Telephone Company is another. So that the two prices for the same article at the same date may be different, but the obligation of the contract is identical; in other words, each Company is getting the net cost plus the contract remuneration provided in this document; but the price to the Telephone Company may be different.

Q. Well, in that case, where something is being furnished not manufactured by The Western Electric Company the price is not made by The Western Electric Company, but by the supplier, as you call it?

A. Yes, sir, that is what happens.

Q. Then the price on all Western Electric Company manufacture- is the same to all of the Companies at a given time?

A. Yes sir.

Q. I am not quite clear about the freight figures in these

costs; who pays the freight on Western Electric Company manufactures?

A. There again there are two conditions; so far as ap-
[fol. 2671] paratus is concerned the freight is paid to destination; it is absorbed in the price regardless of the location.

So far as lead covered cable is concerned, the freight is charged against the telephone company from the factory. The freight is such a high percentage of the price of lead covered cable—it will run, oh, six to ten per cent on the average; so that it is a very much more important item, and the practice has been to charge cable F. O. B. factory and therefore on a different basis from apparatus.

Q. You have used the word "remuneration" a number of times in connection with this contract; by that you mean the percentage that is added by The Western Electric Company to the suppliers price, in the main, do you not?

A. Yes; it means more than that because it is a general term that covers the return to The Western Electric Company for the agency side of this agreement.

Q. When you said, as you did in your direct testimony, that the aim was to have that remuneration at about six per cent of the capital employed, you did not intend that to apply to the profits of The Western Electric Company on stuff that it manufactures?

A. No, sir, I did not.

Q. The distinction being, as you have stated, between the agency business, as you have just called it, and the manufacturing business?

A. Yes, sir.

Q. In Section 7-a of your Exhibit A-1—what I have in mind is this—I do not seem to be able to find it now——

[fol. 2672] Chairman Marshall: Gentlemen, it is past quitting time, and we will adjourn until the 16th of March, at ten o'clock A. M.

Mr. McConnaughey: I can find it by that time.

And thereupon the further hearing of this case was adjourned until Tuesday, March 16th, 1926, at ten o'clock A. M.

[fol. 2673] Morning Session

Tuesday, March 16, 1926.

And thereupon the further hearing of this matter was resumed pursuant to adjournment, before Honorables Charles C. Marshall, Chairman, George T. Poor, and Frank B. Maullar, Public Utilities Commissioners.

Appearances:

Messrs. S. H. Tolles, and Karl E. Burr, on behalf of The Ohio Bell Telephone Company;

Messrs. W. S. McConnaughey and Fred W. Postle, Special Counsel, on behalf of the State of Ohio.

Chairman Marshall: You may proceed.

Mr. Burr: I will ask Mr. G. A. Kositzky to be sworn and take the stand.

[fol. 2674] And also G. A. Kositzky, called on behalf of The Ohio Bell Telephone Company, being first duly sworn, testified as follows:

Examined by Mr. Burr:

Q. Your name is G. A. Kositzky?

A. Yes, sir.

Q. At the time you testified in the so-called toll rate case, which will be hereinafter referred to, you were the Chief Engineer of The Ohio Bell Telephone Company?

A. Yes, sir.

Q. What has been your connection, if any, with the company since that time?

A. In the same position.

Q. Have your duties since your former testimony in the toll rate case been substantially the same as they were at the time you then testified?

A. Yes, sir.

Mr. Burr: We offer in evidence the direct testimony of Mr. Kositzky, taken on March 27 and 28, 1924, appearing in the record in the toll rate case at pages 1054 to 1074 inclusive, and also all of the exhibits introduced in connection with his testimony; the number of the toll rate case in the dockets of the Commission being 1728.

Mr. McConnaughey: That does not include his cross-examination, does it?

Mr. Burr: No.

Mr. McConnaughey: Let us have it understood that that [fol. 2675] goes in along with the direct examination.

Mr. Burr: Very well; also we offer in evidence the further testimony of Mr. Kositzky, appearing at pages 1079 to 1203 of the record in the toll rate case and all exhibits referred to and offered in evidence in connection with his testimony.

Q. Mr. Kositzky, in the so-called toll rate case, you testified to certain services received by your company, the Ohio Bell company, from the American Telephone & Telegraph Company, which will hereinafter be referred to as the American Company, under the so-called License Contract existing between those two companies. In general, does your testimony as to those services apply alike to the toll and exchange property of The Ohio Bell Telephone Company?

A. Yes, sir.

Q. Were you present, and did you hear testimony of Mr. F. L. Rhodes, of the General Staff of the American Company, and Mr. Archibald Allen, also of the General Staff of that company, at the hearing of this case on February 25th?

A. Yes, sir.

Q. Is your company still continuing to receive the services from the American Company covered by the testimony of Mr. Rhodes and Mr. Allen?

A. Yes, sir; it is.

Q. Has that been true during the past two years?

A. Yes, sir.

Q. Is the nature of the service substantially the same today as at the time of your testimony two years ago; and when I say "two years ago" it refers to your testimony in [fol. 2676] the toll rate case?

A. Yes, sir; it is about the same.

Q. Are the services more or less extensive than they were at that time?

A. They are considerably more extensive, due to the growth of the business and the greater development and so forth, in connection with the business.

Q. Has your company still the same privileges with respect to consulting with the members of the General Staffs

and their forces in the American Company organization, and do you find that they are still ready to respond, and do they respond to the requests made by your company from time to time for services in connection with your company's business?

A. Yes, sir.

Q. Can you give instances where your company has made requests for information and for special services of the American Company, and particularly of its General Staff, which have been refused?

A. No, I cannot.

Q. In your former testimony you stated that your company was then receiving financial, legal, accounting, engineering, commercial and traffic services; also rights to use the patents owned and controlled by the American Company, the instrument service and many other services with respect to the business of your company; is your company still receiving those services from time to time, and do your previous answers refer to those services?

A. Yes, sir.

Q. In the toll rate case there was submitted as a part of your testimony Kositzky Exhibit Number Two, referring to the general engineering circulars received by your company from the American Company; also specifications and [fol. 2677] commercial circulars and traffic circulars received by your company from that company; does your company continue to receive such circulars, and specifications?

A. Yes, sir, it does; they have been coming through in certain regularity continuously.

Q. Calling your attention to the compilation consisting of thirty-seven pages which may be marked for identification Kositzky Exhibit A-1, I will ask you whether it contains a list of some of the general engineering, commercial and traffic circulars and specifications received by your company from the American Company during the past two years.

A. Yes, sir, it does; this compilation consists of 373 general engineering circulars shown on pages 1 to 29; 128 specifications of which 6 are in the Hand Book Form, that is for the convenience of the outside construction and installation people, listed on pages 30 to 34; 28 commercial circulars shown on page 35, and 27 traffic circulars shown on pages 36 and 37.

Q. This exhibit, if I understand you, does not contain the circulars and specifications, but only lists them; is that true?

A. It just gives a list of those that we had and recorded.

Mr. Burr: We offer Kositzky Exhibit A-1 in evidence.

And thereupon the document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company, and is herewith submitted and marked Kositzky Exhibit A-1.

[fol. 2678] Q. Considering next, if you please, some of the circulars and specifications listed in your Exhibit A-1, I notice that on page 8 of the exhibit there appears a reference to general engineering circular number 1495, having reference to parallel drop wire; tell the Commission whether or not that is the same parallel drop wire referred to in Mr. Rhodes' testimony of recent date in this case.

A. Yes, sir.

Q. Is your company now using wire of the type and character described in the circular?

A. Yes, sir.

Q. Before describing that, let me ask you whether or not the circulars and specifications listed in your Exhibit A-1 have all been received by your company from the American Company?

A. Yes, sir.

Q. Will that be true of all the circulars and specifications and services to which you will subsequently refer?

A. Yes.

Q. Briefly, what are the advantages to your company in the use of the parallel drop wire over the former type of drop wire in use by it?

A. This particular wire is cheaper; it is less costly to maintain; it is cheaper for several reasons. In the first place the wire being parallel is about two per cent longer for the same amount of metal; the other wire being twisted, we lose about two per cent in the twist, so in that respect there is less material by 2%.

Q. In what wire?

A. In the parallel wire over the former twisted pair wire. Then the twisted pair wire consisted of two separate conductors, each individually insulated with a waterproof and weatherproof material. The weatherproof material being [fol. 2679] a braid, of course that required more material

for that reason, while the parallel drop wire having the two wires closer together, but still insulated, has a braid inclosing the two wires, while the twisted pair wire has a separate braid for each wire, and in that respect there is a considerable saving in the braid itself.

Furthermore, the twisted pair wire, because of its twisted characteristic, is more subjected to abrasion where it comes in contact with poles or trees, which is not the case in the parallel wire.

Then another source of high maintenance is the wire being pulled down or blown down because of ice or wind; this wire being of a smaller diameter——

Q. Which wire?

A. The parallel wire, being of a smaller diameter, accumulates less ice and snow, and also offers less surface to the wind.

Q. Than what?

A. Than the old type of wire.

Q. Have you with you samples of the two kinds of wire; namely, the twisted pair and the parallel drop wire?

A. Yes, sir, I have.

Mr. Burr: The twisted pair wire may be marked as Kositzky Exhibit A-1a, and the parallel drop wire may be marked Kositzky Exhibit A-1b, and they are offered in evidence.

And thereupon the two samples of wire above referred to are admitted in evidence on behalf of The Ohio Bell Tele- [fol. 2680] phone Company, and are herewith submitted and marked respectively Kositzky Exhibits A-1,a, and A-1,b.

The Witness: The former twisted pair wire costs $81.47 per mile for the wire alone and the parallel drop wire costs $75.68 per mile, there being a difference of $5.79 in material in favor of the parallel wire.

Mr. Tolles: That includes the insulation?

The Witness: That is the wire delivered, yes, sir, with the proper overheads. In the next five years, from our five-year provisional estimate, we estimate we will use over 33,000 miles of this new type of parallel wire. The saving of $5.79 a mile makes a first cost saving in material alone of $192,000 in the next five years. Applying against that the customary annual charges, shows an annual saving of $59,500 at the period of 1930.

By Mr. Burr:

Q. Mr. Commissioner Maullar calls my attention to the fact that in your exhibit A-1, page 8, General Engineering Circular Number 1495, there is a reference to the fact that the circular is supplemented by G. E. C. 1603; what have you to say about that?

Commissioner Maullar: The thought I had is, does that supplemental circular make any change of any moment?

The Witness: No. I believe I can explain that. G. E. C. 1495 is complete in that it transmits the specifications explaining the various types of this parallel drop wire; also the new type of knobs necessary to support it to poles [fol. 2681] or buildings. And then it transmits the specifications, Supplement B. That specification describes the method of installing the wire. Now that specification B, or Supplement B, has been superseded by a supplement C, and G. E. C. 1603 transmits this, replacing specification Supplement C.

By Mr. Burr:

Q. And that replacing Supplement C will be offered in evidence at a later time, will it not?

A. Yes; I can offer those now.

Q. Well, don't do that, if you please, because you will destroy the consecutive numbering of the exhibits.

You have already partially described General Engineering Circular Number 1495 of your Exhibit A-1; will you explain a little further to the Commission of just what that circular consists?

A. That describes this wire, all this wire is manufactured in several different alloys and braids. There is the ordinary copper-clad steel wire; there is the bronze wire; there is the ordinary braid wire; then this is also manufactured in a resistant braid wire where it is necessary to string the wires through trees. It has the resistant quality so the wire will last under those conditions.

Mr. McConnaughey: What is this that was offered in evidence?

The Witness: This is a sample of bronze wire, and that is the type that we are planning to use very largely in Ohio,

for the reason that it has a salvage value when the wire is recovered, while a copper steel would be junked.

By Mr. Burr:

Q. What are the numbers of the specifications included [fol. 2682] in G. E. C. 1495?

A. Specification No. 4352, which is the bronze parallel drop wire; 4353, the copper steel parallel wire; 4354 is the bronze parallel wire with the resistant braid; 4355 is the copper steel parallel wire with resistant braid; then there is a specification 4308, which describes the type of knob, both single and parallel for the support of this wire where attached to buildings or poles. Then there is the Supplement C, which is in Hand Book form for the use of the installers, giving them instructions as to how this wire should be installed.

I think I also have a bulletin, number 149, which goes also into some detail as to the classifications of this wire.

Q. Now Supplement C of Specification 3930 replaces Supplement B of Specification 3930, does it not?

A. Yes, that is right.

Q. Now, have you any photographs which show how the wire is used and the method of its attachment on residences?

A. Yes, I have.

Mr. Burr: General Engineering Circular number 1495 and the six specifications, numbers 4352, 4353, 4354, 4355, 4308 and 3930, Supplement C, and Bulletin No. 149 may be marked for identification Kositzky Exhibit A-2, and they are offered in evidence as one complete exhibit.

And thereupon the documents last above referred to are marked collectively as Kositzky Exhibit A-2, are offered [fol. 2683] and admitted in evidence on behalf of The Ohio Bell Telephone Company, and are herewith submitted.

Mr. Burr: The two photographs referred to by the witness may be marked as a Single Exhibit, Kositzky Exhibit A-3, and the exhibit is offered in evidence.

And thereupon the photographs above referred to are offered and admitted in evidence on behalf of The Ohio Bell Telephone Company, and are herewith submitted, as one Exhibit a, and marked Kositzky Exhibit A-3.

Mr. Burr: The two photographs are bound together so that separate identification numbers or letters are not necessary.

Q. You may proceed, Mr. Kositzky.

A. These photographs, I might explain, Mr. Burr, show two examples taken here in Ohio of where this wire has been installed, and showing the method of attachment at the residence end of the wire.

I have also conveniently indicated a reference on the fly-leaf or the first page preceding each exhibit the specifications employed in these various photographs.

Mr. Burr: The fly-leaves referred to by the witness are also offered in evidence as a part of Exhibit A-3.

Q. Had you finished on that exhibit?

A. Yes, sir.

[fol. 2684] Q. Will you briefly refer to one or two others of the specifications which may be of interest as showing some of the new developments, the specifications being those listed in Kositzky Exhibit A-1?

A. On page 9, General Engineering Circular Number 1499 describes a new type of house cable terminal boxes designated as the P. H. and the H. type. This is a new type of terminal replacing the ones we formerly used. These are of a metal type and replace the former type wooden terminal. They are somewhat cheaper in cost and more substantial in that they are fire-resistant, and have other qualities that make them an improvement over the former.

I thought the specification might be of interest as showing just how and where those were used, rather than the G. E. C.

And I have a specification number 3933, Supplement D, which shows the uses or the methods of installing these terminals. That specification 3933 is shown on page 31, the second item at the top of the page.

Q. Of what exhibit?

A. Of Exhibit A-1.

Mr. Burr: Specification number 3933, supplement D, may be marked for identification as Kositzky Exhibit A-4, and is offered in evidence.

And thereupon the document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted and marked Kostizky Exhibit A-4.

[fol. 2685] Q. Have you any photographs showing the method of using this terminal and the character of the terminal itself?

A. Yes, I have two such illustrations; the one shows the H-type terminal and the second what we call the P. H. or protected type.

Mr. Burr: The two photographs showing the two types of terminals, bound together as one exhibit, may be marked Kositzky Exhibit A-5, and the exhibit in its entirety is offered in evidence.

And thereupon the photographs last above referred to are admitted in evidence on behalf of The Ohio Bell Telephone Company, and are herewith submitted and marked Kositzky Exhibit A-5.

Q. Briefly what is a terminal, and what are its uses?

A. A terminal in nearly all cases is a means of carrying wires that are in a cable, or connecting wires in a cable to a point where the service wires can be connected to the cable. In other words, a cable consists of a paper insulated material, and it would not be at all satisfactory to carry those wires in that condition to a point where contact can be made with a weatherproof wire. So it is necessary to make a connection carrying these wires to a point where there are lock nuts or other means of establishing these connections.

A terminal is usually connected with a cable by means of a plumber's joint, making the connection weatherproof [fol. 2686] and waterproof.

Mr. Burr: There is a fly leaf preceding each picture in Kositzky Exhibit A-5, and the fly-leaves are offered in evidence as a part of the exhibit.

Q. What organization was responsible for the design of this new terminal, to which you have referred, and for the specification with respect to it?

A. The A. T. & T. Company to the best of my knowledge and belief; at least they furnished us with the information.

Q. What company, if you know, has developed the other improvements to which you have referred, and to which you will refer throughout your testimony?

A. These have been furnished us by the A. T. & T. Company, and so far as I know were developed by them.

Q. During what period of time?

A. In the last two years or since my previous testimony, on the receipt of these services.

Q. On page 10 of Kositzky Exhibit A-1 there is a reference to General Engineering Circular number 1511 describing a new type of terminal known as Type C. The circular also refers to bulletin number 139. What kind of a terminal is the Type C terminal and when was it designed, if you know?

A. That is a type of terminal most commonly used on poles. It is a very popular terminal; thousands of those are used every year in Ohio. It was designed recently,—at least in the last two years. Bulletin Number 139 is dated [fol. 2687] April 8, 1924, and that is when we first received this information on this type terminal. It replaces a terminal of the 14 type that was used heretofore.

Q. In what respects does the new terminal differ from the former type terminal number 14?

A. The new terminal has a number of advantages. In the first place it is less costly; in the second place it has a cover that is more nearly weatherproof than the cover on the other terminal. The wires are carried into the terminal from the bottom, and in that manner the dirt and moisture are not as apt to enter the terminal and cause what we call low insulation. That was a common experience in the 14-type terminal.

Q. Have you a copy of Bulletin Number 139?

A. Yes, sir, I have.

Mr. Burr: It may be marked Kositzky Exhibit A-6, and is offered in evidence.

And thereupon the bulletin last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company, and is herewith submitted and marked Kositzky Exhibit A-6.

Q. Have you also a photograph illustrating the use of this new type of terminal?

A. Yes, sir; I have here a photograph which shows one of these terminals installed on a pole which connects with the wires in an aerial cable.

I might also mention that this terminal costs $7.00, while [fol. 2688] the former terminal of the 14-type cost $8.06, or a difference in favor of this Type C terminal of $1.06.

Our estimate is that in the next five years we will use 66,600 of these terminals, and at a saving of $1.06 our first cost saving would be $70,500, and applying carrying charges to that shows an annual saving of $14,000 a year.

Mr. Burr: The photograph together with the fly-leaf describing it may be marked Kositzky Exhibit A-7, and is offered in evidence.

And thereupon the photograph and fly-leaf last above referred to are admitted in evidence on behalf of The Ohio Bell Telephone Company, and are herewith submitted and marked Kositzky Exhibit A-7.

The Witness: It would be interesting to note in this photograph that it shows a wire leading off to the left of the pole. This wire is the other end of a parallel drop wire shown in one of the other photographs, and shows the means of connecting into a cable through a terminal.

Q. On page 12 of Exhibit A-1, in the first item there is a reference to General Engineering Circular Number 1537, Emergency Number One local manual switchboard; what is the date of that circular?

A. That was transmitted March 16; the date is March 16th, 1925.

Q. What is the Emergency Number One Local Manual Switchboard to which the circular refers?

A. The Western Electric Company carries at Haw- [fol. 2689] thorne, Chicago, a complete 300-line Number One Manual Switchboard, including both A and B boards; that is the A Board being a subscribers' board and the B board the trunk board. These boards are carried for emergency purposes in case equipment is destroyed by fire or other casualties, and the board or any part of it is ready for immediate express shipment to any one of the Bell System companies having occasion to call on this equipment. The investment as I understand is something over $100,000.

The G. E. C. Number 1537 goes into considerable detail as to just the parts of this board, how they are crated, so that each box is specifically labelled. It also transmits the diagram showing the face equipment, making it as convenient as possible for its use in emergency cases.

Q. Briefly, what is the difference between an A-board and a B-board?

A. An A-Board is what is known as the subscriber board, and is the board on which a telephone call—an originating call, is answered. That is, if you raise your receiver from your instrument a little light will flash in front of the operator at the A-board, and the operator then answers your order or request for a number. If the call is to a board in another section of the city where you have more than one office, as for instance here in Columbus and also in Dayton, and other multi-office towns, it is necessary to trunk that call from this A-board to a trunk or B-board, in the other office, and there the operator at the second office completes the call through the B or trunk board.

Q. What I wanted to bring out was that this equipment that is held for emergency includes not only the so-called [fol. 2690] main board, but also the equipment for a trunk board reaching another exchange?

A. Yes, sir, that is right. Of course in every case—I might explain further, that in every multi-office city there is an A and a B board in each building.

Q. You referred to the number of lines for which the board is equipped, and I think you stated it was a 300-line board; what is the fact in that respect?

A. Yes, it is a 300-line board, and it can be ordered as I said before wholly or in part. You can order 100,—make a 100-line board out of it, or a 200-line board, or order the entire equipment.

Q. Isn't it a 3000-line board?

A. Did I say 300?

Q. Yes, you did.

A. I meant to say three thousand.

Mr. Burr: The General Engineering Circular number 1537, "Emergency Local Manual Switchboard" which includes Western Electrical Company specification X62606, referred to in General Engineering Circular 1537, may be

marked for identification as Kositzky Exhibit A-8, and is offered in evidence.

And thereupon the document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company, and is herewith submitted and marked Kositzky Exhibit A-8.

Mr. Burr: As a part of the exhibit there are six floor plan drawings and front equipment drawings which are also apart of the exhibit and offered in connection with it.

[fol. 2691] Q. Is the emergency board covered by the exhibit available to your company in the case of emergency?

A. Yes.

Mr. Burr: On page 17 of Exhibit A-1 reference is made to General Engineering Circular 1602, the subject being "Type P Ringing and Coin Control Motor Generator;" and to the circular there is attached Bulletin Number 161. The circular and bulletin bound together may be marked for identification Kositzky Exhibit Number A-9, and they are offered in evidence as a single exhibit. The circular consists of 10 pages and the bulletin of 35 pages.

And thereupon the document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company, and is herewith submitted and marked Kositzky Exhibit Number A-9.

Q. Will you describe the improvement represented by the Type P Ringing Machine?

A. This new type ringing generator has been developed by the Development and Research Department of the A. T. and T. Company, and provides in a single machine various types of current necessary for ringing purposes, coin collecting instruments and such uses, formerly two or more machines were necessary, and in some instances two machines and an operator. This is quite an improvement, and saves considerably in the first cost.

Mr. Postle: How recent is that improvement?

The Witness: This is very recent, January 27, 1925.

[fol. 2692] By Mr. Burr:

Q. Will you next refer, if you please, to General Engineering Circular 1711 referred to at page 25 of your exhibit A-1 and explain it?

A. General Engineering Circular 1711 transmits specification number 4032, which is listed on page 31 of Exhibit A-1.

I thought this might be of interest since it illustrates an important improvement in the method of terminating cables where the same leave the underground system to connect with the aerial system.

It saves in first cost and also simplifies the construction work.

Formerly we had an enclosed pipe, and we experienced considerable difficulty in pulling the cable from a manhole to the pole. Now the cable can be fed either way, down into the pipe at the pole end, or into the manhole and pulled out at the pole end. Then when the cable has been pulled into the duct, the duct is then sealed at the ground line with cement, and the material called oakum where formerly it was necessary to wipe a plumber's joint at the top of the pipe.

Q. What do you mean by wiping a plumber's joint?

A. That is a seal, you might say, of molten lead or a lead cap at the top of a pipe. It is a method of sealing a lead cap at the top of the pipe to the cable by means of solder, making it watertight.

Q. What advantage is there with respect to cost from the new type guard as against the one formerly in use?

A. It saves in labor in placing the cable. The U-guard [fol. 2693] is a half-round type, you might say, or a pipe sawed in two. In that respect there is less material in it than a completely enclosed pipe.

Q. Have you a photograph illustrating the U-guard?

A. Yes, sir, I have.

Q. And also have you a copy of specification number 4032, Supplement B, having reference to it?

A. Yes, sir.

Mr. Burr: The Supplement B of Specification 4032 may be marked as Kositzky Exhibit A-10, and is offered in evidence.

And thereupon the document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company, and is herewith submitted and marked Kositzky Exhibit A10.

Mr. Burr: The photograph is offered in evidence as Kositzky Exhibit A-11.

And thereupon the photograph above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted and marked Kositzky Exhibit A-11.

Q. On page 27 of Kositzky Exhibit A-1, a reference is made to General Engineering Circular Number 1745 which lists a double thimble guy rod. Will you explain the use of the rod, and in what respects it is an improvement over the old kind of guy rod, formerly in use?

A. I might explain that a guy rod is a metal bar that is [fol. 2694] attached to an anchor. The anchor is buried in the ground, and the rod is the means of connecting or holding the stress of a pole by means of a guy wire.

Formerly, where guying called for more than one guy wire, two rods were necessary. There were instances where an attempt was made to attach the two wires to a single rod of the old type, but generally it was injurious to the guy wire, and the common practice prior to the development of this double thimble rod was to place two guy rods and two anchors.

This new rod does away with the necessity of two rods formerly used, and is a material saving over the former practices.

Q. In order to show the type of construction which the rod will displace, have you a photograph showing two guy wires supporting a pully of heavy cable?

A. Yes, sir.

Q. Have you also a copy of the General Engineering Circular Number 1745—with amendment Number 1 to Specification 4134?

A. Yes, sir.

Mr. Burr: It may be marked for identification as Kositzky Exhibit A-12 and the photograph of the pole with the two guy wires may be marked Kositzky Exhibit A-13, and they are offered in evidence.

And thereupon the circular and photograph above referred to are offered and admitted in evidence on behalf of The Ohio Bell Telephone Company, and are herewith submitted and marked respectively Kositzy Exhibits A-12 and A-13.

[fol. 2695] Q. As compared with the former method of attaching guy wires illustrated in your exhibit A-13, does any

exhibit heretofore offered in evidence show the U-guard to which you formerly testified?

A. Yes, sir; exhibit A-11 shows the method of protecting the cable where it runs vertically up poles with the use of the U-guard.

This latter photograph just submitted shows the old method of carrying a cable up a pole by pulling it through a pipe and sealing it at the upper end of the pipe as described.

This is a fairly large size cable, being a 600-pair, and is supported on a strand pulled vertically of about 10,000 pounds stress. That necessitates two guy wires as shown.

Now the new method of guying, instead of carrying it to two rods at the ground, will have only one rod as described.

Q. Now the specification already offered in evidence as Exhibit A-12 contains a drawing of the double thimble guy rod, does it not?

A. Yes, sir.

Mr. Burr: There are many other circulars and specifications referred to in your Exhibit A-1 which I will not ask you to describe at this time, with the understanding, however, and if either counsel or the Commission desire us to produce any of the other circulars or specifications we will endeavor to comply with their requests in that respect.

Mr. McConnaughey: Mr. Burr, may I ask a question [fol. 2696] there—a general question?

Mr. Burr: Yes.

Mr. McConnaughey: Have these things that he has testified to all been adopted and are they in use by the Ohio Bell Telephone Company?

The Witness: Just as rapidly as we are able to obtain the materials and put those methods and materials into use, yes, sir.

Mr. McConnaughey: For all new construction or reconstruction or wherever it can be used?

The Witness: Yes, sir; in some instances we will have a stock of old material on hand and we would use that up before we would order new.

Commissioner Poor: What are those items at the top of page 33 of Exhibit A-1? That sounds like a drug store supply or reads that way.

Mr. Tolles: Are you asking about the Oil of Cloves?

Commissioner Poor: There are several items there. They

read like a supply in a drug store, and I wondered where they came in, in telephone work.

The Witness: Those are a list of traffic circulars, and those are items that are carried in stock in the operating rooms for the use of the employees and emergency uses.

Mr. Postle: You also have on a former page something about a dead man; what is that?

Mr. Burr: That is number 4340; explain it, if you please.

[fol. 2697] The Witness: You see, we have what we call first aid kits used in case of accidents or emergency, and we carry a number of articles such as listed there, and whenever they are used others can be ordered by referring to the proper code number, and these also include some of those items.

By Mr. Burr:

Q. What Mr. Postle was asking about was the item referred as a dead man, number 4340, on page 32.

Mr. Postle: And also at the bottom of page 11 under G. E. C. 1536.

The Witness: Well, a dead man is an anchor; it is the end that this guy rod is attached to.

Mr. Postle: I thought it had no connection with the list on 33.

Mr. McConnaughey: What are those circulars with reference to various drugs; what is the substance of the circular?

The Witness: They describe the chemical that is used for these first-aid purposes, and the A. T. & T. Co. give us a specification on the various items that are considered of use for these operating rooms as first aid kits.

Mr. McConnaughey: Does it specify the use to which they are to be put, and how they are to be used?

The Witness: Yes, sir; that is also outlined in the first-aid practices, the use to which they are put.

By Mr. Burr:

Q. Referring now to the matter of commercial circulars as distinguished from General Engineering Circulars, have you any samples of the Commercial Circulars listed in Kositzky Exhibit A-1?

[fol. 2698] A. Yes, sir, I have one or two samples that I thought might be of interest;

The first one is listed on page 35, Commercial Circular Number 54; "Machine Switching Private Branch Exchange." This describes the uses of the mechanical type of switchboard on a subscriber's premises;

It is quite important that the economic use of these boards be given to our employees so that when we receive requests from a subscriber we can advise him as to the size and type and the location with reference to the size of his institution, that one of these boards are justifiable. Sometimes it is possible to put a board in a place that is too small where the expense would not justify it; and others can in a large institution such as a bank.

These automatic or mechanical boards for inter-connecting numbers are worth while. This goes pretty much into detail to acquaint our commercial people with this information whenever they have occasion to answer demands for such service.

Mr. Burr: The Commercial Circular Number 54 on the subject of Machine Switching Private Branch Exchanges, consisting of 29 pages of which the last five pages are photographs, may be marked as a single Exhibit, Kositzky Exhibit A-14, and is offered in evidence.

And thereupon the document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted and marked Kositzky Exhibit No. A-14.

[fol. 2699] Q. On the same page of your Exhibit A-1, namely page 35, reference is made to circular number 60, entitled "Economic Survey Work"; will you explain the scope of the circular which may be marked for identification Kositzky Exhibit A-15?

A. This describes the method of making an overall survey of the company's territory as a whole, as in our case it would be for Ohio.

This is very important in connection with toll fundamental plans of future forecast of station and population growth.

I think I went somewhat in detail into those surveys in my former testimony.

An economic survey has been made in Ohio in the last two years in accordance with this circular dated March 6, 1926.

Mr. Burr: The circular, consisting of 6 pages, and which has heretofore been marked for identification Kositzky Exhibit A-15, is offered in evidence.

And thereupon the document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company, and is herewith submitted and marked Kositzky Exhibit A-15.

Q. Now these are only two of the Commercial Circulars listed in your Exhibit A-1. At the request of the Commission or counsel are you ready to describe any of the others, and will they be produced by you on their request?
[fol. 2700] A. Yes, sir.

Mr. Burr: I take it, the Commission does not want us at this time to go into all these circulars and specifications?

(They shake their heads "No.")

Q. Have you any other circulars furnished to your company by the American Company?
A. Yes, I have. We have received, on March 13, 1925, a letter suggesting for field trial a new type of protected terminal known as the fuse pot. This is also described on page 22 in my exhibit A-1, as General Engineering Circular 1666.
Q. What type of terminal will the new device replace?
A. This new device,—I might explain that where an aerial cable enters the underground system it is necessary to place fuse protection. Formerly this protection was placed in a large wooden box, mounted on the pole.
We had difficulty in some instances in mounting these boxes, and other objections.
This new type mounts the fuses in a cast iron pot called a fuse pot, and in turn this can be placed in a man hole, so that there will be no visible appearance above the ground of the fuse connecting the aerial with the underground cable.
I think this is better illustrated in a photograph I have which shows one such pot recently installed in Ohio.

Mr. Burr: The letter on the subject of the fuse pots consisting of 4 pages, the last page being a compilation of fuse pot data, may be marked for identification as Kositzky Exhibit A-16, and is offered in evidence.
[fol. 2701] The two photographs together with a fly leaf preceding each photograph, the photographs and fly-leaves

being all bound together as one Exhibit, may be marked Kositzky Exhibit A-17, and is offered in evidence.

And thereupon the letter and photographs and fly leaves last above referred to are admitted in evidence on behalf of The Ohio Bell Telephone Company, and are herewith submitted and marked respectively Kositzky Exhibits A-16 and A-17.

Q. Now with the letter and photographs before you, please discuss a little more fully the new development represented by the fuse pot.

A. Referring to the first photograph, it shows in an underground manhole on the left-hand corner this fuse pot of a 600-pair capacity.

Where this is used it is unnecessary to place a terminal on a pole.

The second photograph shows the former method of carrying a 600-pair cable to the underground system. In this case two boxes were necessary, 400 pair being our largest capacity box, and in order to take care of 600 pair, a 400 and a 200 pair were necessary. The terminal on the right is the 200 pair and the one to the left is the 400 pair.

The saving in first cost——

Q. Wait a moment; are you right in that?

A. The one on the right in the second picture is the 200 pair. The photograph is misleading in that the larger terminal is in the background.

[fol. 2702] Q. Proceed.

A. The saving in first cost in the use of a fuse pot over the former method of termination is about $600 per termination.

Q. What do you mean by "termination"; per pot?

A. Per pot, yes. It would not be per box, because there are two boxes necessary for a 600-pair cable.

I think it might be interesting here to refer back to the former photograph which shows the absence of a box on the pole, Exhibit A-13. In this case you will notice that the pole is fairly close to a residence, and it would be difficult to place say a 400-pair box or even a 200-pair box on that pole without serious objection from the subscriber, and where it has been necessary, with the consent of a subscriber, to place such terminal, we have had objections at a later date. For instance, our employees have occasion to frequently visit these terminals where they are on a pole,

and many times they come about in line with a bed room window. Our employees getting on the job rather early in the morning, interfere with the late risers.

Q. Is the photograph on the fuse pot in the manhole shown in your exhibit A-17 one actually in use by The Ohio Bell Telephone Company?

A. Yes, sir.

Q. Where is its location?

A. This is at Canton. Would you care for the exact location?

Q. No, I don't know as it is material.

Commissioner Maullar: What is the construction of a fuse pot?

The Witness: It has mounted in it 714 fuses, and——

[fol. 2703] Commissioner Maullar: I just mean the outside construction. It looks like it is concrete.

The Witness: It is cast iron and the cables that enter the pot are sealed. The pot itself is filled with a compound so as to expel all moisture or prevent any moisture from entering.

By Mr. Burr:

Q. Are there any other advantages from the use of the new fuse pot besides the fact that it will take care of a greater number of pairs and can be maintained underground instead of in the air?

A. An advantage in first cost of about $600 per fuse pot over and above the former use of two wooden boxes, one cable connection being necessary instead of two where the boxes are used.

Q. Have you estimated how many of the new fuse pots will be installed in your succeeding five-year program? If you have not, you need not do it now.

A. Yes; there are several hundred, but I have not the exact figures with me.

Mr. McConnaughey: Would you mind—can you state now the cost of the old and the new; give us some idea of how you get at that $600?

The Witness: I had it here somewhere, Mr. McConnaughey, and if I run across it I will give it to you later.

Mr. McConnaughey: Very well.

The Witness: Here it is. A fuse pot installed costs $838.00.

Mr. McConnaughey: That is the new type?

The Witness: Yes; that includes a 600-pair cable carried from the pole to the manhole and the splice connecting [fol. 2704] the fuse pot into place. This replaces the two boxes on the pole in which are mounted 600 pairs of fuses; that would be 1200 fuses; two conduit connections between aerial and underground, one for the 400 and one for the 200 pair cable, including the 400 and the 200 pair cable, together with the splices at both ends. That cost installed complete is $1480, or a difference of $642.

By Mr. Burr:

Q. Now, have any of these services and improvements to which you have referred any particular reference to the unification of the two systems of telephones in Ohio; by that I mean the unification of The Ohio Bell Telephone Company and the Ohio State Telephone Company systems?

A. No, sir.

Q. Has there been any development since your last testimony in the matter of truck bodies in use by the company?

A. Yes; I have a photograph here which shows the latest truck body installed on a truck of about a 2-ton capacity which you might say is a tool box on wheels. This is rather complete in that it has compartments for small materials, tools, and also has provision for mounting a collapsible derrick which is carried on the left side of the truck.

This truck is also equipped with a power winch mounted back of the front seat. This winch is used in connection with a derrick in lifting poles or other heavy objects; moving poles and so forth.

Mr. Burr: The photograph, together with the fly leaf de- [fol. 2705] scribing it, bound together as a single exhibit, may be marked Kositzky Exhibit A-18, and is offered in evidence.

And thereupon the photographs and fly leaf last above referred to are admitted in evidence on behalf of The Ohio Bell Telephone Company and are herewith submitted and marked Kositzky Exhibit A-18.

Q. Tell the Commission whether or not the truck body to which you refer and which is illustrated in the Exhibit

is an improvement over the one formerly in use by your company.

A. Yes, it is; it is more complete and is not as bulky and heavy as the ones formerly used by The Ohio Bell Telephone Company.

Q. And what company developed the improvement?

A. The A. T. & T. Company furnished us the information and as far as I know it is the result of their development.

Q. I wish you would also make a brief reference to the new type of aerial cross connecting terminal, which is illustrated in the photograph which, with the fly-leaf describing it, may be marked for identification as Kositzky Exhibit A-19.

A. Specification number 3929, at page 91, describes the use, and G. E. C. 1708 transmits to us the information in connection with the new type of aerial cross connecting terminal.

I thought this might be of interest, since it is a development frequently used in connection with obtaining a higher efficiency or a better use of an aerial cable plant.

It is connected into an aerial cable at some point from [fol. 2706] the office and then in turn from this terminal we cross connect to other terminals; thereby any spare conductors in a cable can be cross connected to a spare conductor in another cable where there are several leaving this one point.

Mr. McConnaughey: What is that page 91 you referred to?

The Witness: That is a hand book of which I have not a copy here; it is not a new one.

Mr. McConnaughey: I thought you were talking about page 91 here; it is on page 30 of your exhibit A-1?

The Witness: Yes, sir; it is page 91 of that specification of which I have not a copy here, but it illustrates the use of this terminal.

Mr. Burr: Kositzky Exhibit A-19 is offered in evidence.

And thereupon the document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted and marked Kositzky Exhibit A-19.

Mr. Burr: Would you like to have a copy of that speci-

fication to which you have just referred, Mr. McConnaughey?

Mr. McConnaughey: No; I just wondered what that reference was; he used it in his statement and I thought he referred to Kositzky Exhibit A-1.

By Mr. Burr:

Q. In your Exhibit A-1 there are listed some twenty-seven traffic circulars; in brief, what have you to say about [fol. 2707] them?

A. Those are circulars sent to The Ohio Bell Telephone Company from time to time for use in the Traffic Department.

I think another witness, Mr. Anthony, is going to cover the traffic service, and I believe also will say something about these traffic circulars.

Q. To what extent are the circulars, bulletins, and specifications to which you have testified this morning typical of the general type and class of circulars, bulletins and specifications which your company has been receiving from The American Company during the past two years?

A. They are typical. I was interested in just reviewing them briefly, to see about how many we received a year as compared with former years, and I notice quite a substantial increase in the number of these circulars, bulletins and specifications.

Q. What does the number of improvements, new developments and advancements reflected in the number of circulars which your company has received during the past two years indicate with respect to the activities and services of the American Company on behalf of your company during that two-year period as compared with the period previous to your testimony in the toll rate case?

A. It indicates a greater activity; that is one of the means that we have of receiving information on new developments developed by the A. T. & T. Co.

Q. You say a greater activity; greater activity on the part of what or whom?

A. Greater activity on the part of the A. T. & T. Company.

Q. In addition to the circulars, specifications and bulle-
[fol. 2708] tins which your company has been receiving from the American Company during the past two years,

has your company received any other services from that company during that period?

A. Yes; we received a great many special services or services upon request. Any problems we have, we avail ourselves of the talent that we know they have in the A. T. & T. organization, and receive help whenever we feel that the same is necessary. This help we get in correspondence, many times by telephone conversations and very frequently trips by asking the various people in New York to come to Ohio and help us with our problem here, or we may often go to New York and consult with them there.

Q. Have you a list showing in part the number of letters received from the American Company with respect to the problems of your company in Ohio, and also a list showing in part the number of telephone conversations between representatives of the two companies on specific problems during the past two years?

A. Yes, sir, I have a list that shows in the two general classifications the letters that we have received in the last two years or since January, 1924; also the telephone conversations. This shows 1630 letters and 272 conversations.

Q. Is the list complete?

A. No, I do not think it is. It is difficult to get a record of all the conversations, and I doubt if this is a complete list of the letters.

Q. How many pages are comprised in the letters approximately?

A. From two to four or five pages; they will probably average 2½ to 3 pages, to the letter.

[fol. 2709] Q. About five thousand pages?

A. It will be about five thousand pages of correspondence, yes, sir.

Q. You offered in evidence a similar list in the toll rate case, did you not?

A. Yes, sir.

Q. Known as Kositzky Exhibit Number 26?

A. Yes, sir.

Mr. Burr: The list to which the witness now refers, that is to say the list of letters and tel-phone conversations occurring during the past two years or since his testimony in the toll rate case, may be marked for identification Kositzky Exhibit A-20, and is offered in evidence.

And thereupon the document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company, and is herewith submitted and marked Kositzky Exhibit A-20.

Q. Will you detail briefly a few of the matters covered by the letters and telephone conversations?

A. On March 25th, 1925, we received a letter in connection with the installing in Ohio—at least in Cleveland and now in Toledo, of what we call rotation billing, and I will refer to that a little later.

Another letter on April 24, 1925, was a letter in response to our request as to the type of circuit to be used in connecting the exchange at North Canton with the new installation at Canton.

Here is another case of a letter dated November 13, 1924, in response to our request as to the proper connection [fol. 2710] with the new power station that the Cleveland Electric Illuminating Company is installing at Avon, permitting their private branch exchange at that location to be connected with a private branch exchange at Cleveland. It is a question of proper transmission connecting two switchboards over that distance, which, for an extension station, is rather unusual.

I have a number of others that I believe I can refer to a little later in connection with some specific projects.

Q. How many matters covered by these letters and telephone conversations had reference to the unification work which the company has been doing in Ohio during the past two years?

A. Well our unification work is practically—or is completed now and was pretty well engineered two years ago, so we have not had a great deal of special work necessary in which the A. T. and T. Company were consulted in the last two years. I have a record of very few; I think this list of letters shows but one.

Q. Has your company, during the past two years, requested men from the American Company to come to Ohio and take up with you direct matters of interest to the Ohio Bell Telephone Company?

A. Yes, sir; we have a record of 466 visits or trips where men, one or more, either came to Ohio or some of our men went to New York in connection with specific problems or questions.

Q. When you say that men came to Ohio, to what men do you refer?

A. Men from the A. T. and T. organization.

Q. Have you listed in part the trips of American Company representatives to Ohio and trips of representatives [fol. 2711] of your company to New York for conference with representatives of the American Company during the past two years?

A. Yes, sir; they are classified in fifteen general classes, such as commercial, which involves 94 trips, central office equipment, 43 trips; outside plant, 11 trips; transmission, 37 trips, and so on.

Mr. Burr: The list may be marked for identification as Kositzky Exhibit A-21, and is offered in evidence.

And thereupon the document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company, and is herewith submitted and marked Kositzky Exhibit A-21.

And thereupon a recess was taken until 1:30 o'clock P. M. of same day.

[fol. 2712] Afternoon Session

Tuesday, March 16, 1926.

And also G. A. Kositzky, resuming the stand for further examination in chief, having been heretofore duly sworn, continued his testimony as follows:

Examined by Mr. Burr:

Q. At the close of the morning session you had made some reference to visits by American Company engineers to Ohio, and by Ohio Bell engineers and their employees to New York; why is it necessary in some instances for the Ohio Bell men to go to New York rather than to have the American Company men come to Ohio?

A. That is a matter of expedience. In case one employee has a particular matter to take up that requires contact with several experts of the A. T. & T. Co. in one or more departments, why it is much better for the one man to go to New York than to have two or three men say, come

to Ohio; or it may be a case where the matters referred to must be taken up in New York instead of in Ohio.

Q. How much of the work which was the subject of these trips was due to unification problems, if you know?

A. I do not believe but very little; I know of only one or two of these trips that involved unification. There were [fol. 2713] one or two this year that are not included in this list here in Columbus.

Q. You have not made any special effort to list the unification services?

A. No, sir.

Q. Why is that?

A. We did not have a great deal of work in which the A. T. & T. Company's men were involved as pertaining to the unification work in the last two years.

Q. And that work is over now?

A. It is over now, yes, sir.

Q. Give the Commission a general idea of the questions or problems which give rise to the correspondence, telephone conversations and trips to which you have been referring.

A. Well I have in mind a number of telephone conversations of my own; two that I can recall where it was necessary for the Ohio Bell Company to obtain a man of certain qualifications—in fact two men. They had to be telephone men, and yet had to be building men; that is, to answer questions, or rather represent the company in matters to be taken up with the architects and contractors in connection with our building work. I refer now to the Cleveland building and also to the Toledo building. These are unusual projects, involving millions, and so many questions had to be looked up and answered for the company, and to get a man particularly qualified, and familiar with the architects' and contractors' game, and also the telephone game, it was necessary to go outside of the city to obtain such talent. And I took this up with Mr. Charlesworth, the plant engineer in New York of the A. T. & T. Company, who immedi- [fol. 2714] ately made inquiries of various Bell companies, and obtained for us on a loan basis two such men. One is now in Cleveland, and the other is in Toledo.

Q. Neither of those men were employees of the American Company, were they?

A. No.

Q. What have you to say with respect to assistance from the American Company in the matter of training employees during the past two years?

A. Quite a little. We conduct in Ohio a number of training courses. I will not mention the traffic training which has been going on for a number of years, but I would like to mention the correspondence or reading course work that we are now conducting in Ohio. I should have mentioned this two years ago, but I bring it up now because we are more actively engaged in the work now than at that time, and the assistance we have received from the A. T. & T. Company, first in preparation of these particular courses of which there are eight, and then the supervision that we have received in those that we prepared ourselves.

Then educational work has been under way now for a number of years, and we have rather encouraging results from it.

During the year 1925, 558 employees were enrolled; that is the monthly average, with a maximum of 886.

Q. Employees in what?

A. Enrolled in this educational work. We have had 383 employees who have completed one or more of these courses.

Of the eight courses, consisting of about 90 pamphlets [fol. 2715] or lessons, so called, fourteen were written by the A. T. & T. Company and the remainder were written very largely from material which was furnished us by the A. T. & T. Company.

I have here some examples of these courses, if you care to illustrate what those are.

Q. Before identifying them, let me ask you whether any trips were made by the American Company employees from New York to Cleveland in connection with this training work.

A. Yes, there were a number of trips made to Ohio in connection with these reading courses. And I want also to mention some other educational work that has been actively under way in the last two years in which we have received a great deal of service from the A. T. & T. Company.

Q. You referred to the number of employees enrolled in the training courses, and I think you said something about the monthly average being 558 employees.

A. Yes.

Q. During what year did that average obtain?

A. 1925.

Q. And the maximum number enrolled, 886, in a given month, was for what year?

A. Also for 1925. I would like in that connection to also mention, Mr. Burr, that in our company with so many employees there are quite a number of new employees added every year,—that is male employees. I think last year there were over 1500.

Now in order to help these employees to become proficient as quickly as possible some means of educational work is essential, and this has proven to be very satisfactory.

Q. What company made the realization of the plan possible; and by "the plan" I mean the planning for the read-
[fol. 2716] ing courses?

A. It originated in the Ohio Bell, the idea of giving this form of training or educational training to the employees, and we in turn called for assistance from the A. T. & T. Company.

Q. Have you samples of the reading courses?

A. Yes, sir, I have. I would like to refer to a few typical ones.

Here is one on commercial work; it is Part 1 of Section 7, entitled "Population estimates".

Q. Just a moment——

Mr. Burr: It may be marked for identification as Kositsky Exhibit A-22-a.

And thereupon the document last above referred to is marked for purposes of identification as Kositsky Exhibit A-22-a.

The Witness: Here is another one on commercial work, Part 1 of Section 8, entitled "Budgetary Control Through Provisional Estimates."

Mr. Burr: It may be marked as Kositsky Exhibit A-22-b.

And thereupon the document last above referred to was marked for purposes of identification herein as Kositsky Exhibit A-22-b.

The Witness: These two were written by the A. T. & T. Company and printed by The Ohio Bell Company.

Q. What is the next one?

[fol. 2717] A. Then I have two more; this is section 4——

Q. Section 3, isn't it?

A. Section 3, I mean; "Specific Application of Telephone Repeaters."

Mr. Burr: It may be marked for identification as Kositsky Exhibit A-22-c.

And thereupon the document last above referred to was marked for purposes of identification herein as Kositsky Exhibit A-22-c.

Q. Proceed.

A. Section 4, "Specific Application Measuring Work at Test Boards".

Mr. Burr: It may be marked for identification as Kositsky Exhibit A-22-d.

And thereupon the document last above referred to was marked for purposes of identification herein as Kositsky Exhibit A-22-d.

The Witness: These two latter bulletins were written by the A. T. and T. Company and also printed by them, and copies furnished to us.

Mr. Burr: Kositsky Exhibits A-22-a, A-22-b, A-22-c, and A-22-d, are offered in evidence.

And thereupon the documents last above referred to are admitted in evidence on behalf of The Ohio Bell Telephone Company and are herewith submitted and marked respec- [fol. 2718] tively Kositsky Exhibits A-22-a, A-22-b, A-22-c, and A-22-d.

The Witness: In the commercial office in our company considerable training work has been underway in the last year in training employees that we have in these offices to better understand the telephone business; also to train them in the art, you might say, of meeting the public and being in a position to answer all questions that the subscriber would be likely to ask in connection with telephone work.

The A. T. & T. Company have prepared and have sent employees to Ohio to start this work; it has been going on now in a number of the larger cities, and it is the intent to carry out this work in all the larger cities in Ohio.

Q. What is the transmission school, and what have you to say of it?

A. The Ohio Bell company has in the last year conducted

two sessions of a transmission school. This is to train employees who have to do with the testing, as well as engineering and maintenance of telephone equipment, in order that the theories of transmission might be properly understood.

Many times circuits, to the ordinary employee, may seem to be entirely satisfactory, but not being trained in the art of transmission there may be transmission defects which would impair the transmission, both local and long distance.

We have had two such schools recently for which the A. T. & T. Company in the first school furnished five men, several days each.

[fol. 2719] Q. For what purpose?

A. For the lecturing and instruction work. In the second school they had two men of several days each.

In addition to furnishing us these men they have also furnished us the text together with some of the apparatus; and such apparatus as we furnish ourselves was the product of the A. T. & T. Company's laboratories.

Q. Briefly, what is meant by the term "transmission"?

A. Well, transmission is a term that is quite frequently and commonly used in the telephone business as pertaining to the talk you might say, or the qualities of circuits, equipment and so forth, in their characteristics of being able to properly, you might say, talk over or be heard over a telephone. It involves almost every branch of the telephone plant.

Q. Transmission proper, however, refers to the sending of a voice over the telephone wires, does it not?

A. Yes, that is right. And the apparatus and wires and all are designed so as to give that transmission in a standard manner.

Q. Can you give any other examples of recent assistance from the American Company in connection with the commercial work of your company?

A. Yes; in some of the larger cities we have recently changed our commercial offices; that is, we have moved into quarters with an entirely new lay-out. Dayton is one; Springfield is another, and we are planning to move here to Columbus.

A lay-out has been prepared for Cleveland, and another [fol. 2720] for Toledo. We have moved in Canton. I might name a number of others.

Now, laying out a commercial office at first might seem rather simple.

I believe I mentioned two years ago of establishing what we call the Unit System of commercial offices.

The A. T. & T. Company have a number of experts who devote their entire time in arranging a commercial office, both as to location of desks; the location of the proper employees and equipment, so that the business of a commercial office can be handled in the most satisfactory manner.

There have been some improvements which can be measured, just from the speed of answering the telephone, for instance.

I might say, also, that in the large offices we have what we call commercial service observing. There is an operator or an employee, rather, who observes the employees' end of a telephone conversation, for instance, to see if the subscriber has received a prompt response and courteous treatment. It is not the intent to purposely criticize an employee, but to instruct him as to the proper way to answer a telephone and give the proper information.

Now if this may be of any interest, prior to 1924 our records show that calls coming in to an office, only 2% were handled or answered in about two seconds.

Q. You are referring now to a commercial office?

A. Yes, I am referring now to a commercial office.

Q. Proceed.

A. In 1924 that 2% increased to 29%; and our latest [fol. 2721] record that I have of December, 1925, show that about 72% of calls coming in to a commercial office are answered within about two seconds, and also 5% are handled in more than 10 seconds. That might be where the line is busy, but even in those cases they have so arranged that there is another employee available to answer a phone in case the requests are rather numerous.

Q. In what specific respects has the American Company been of assistance to your company in this development?

A. They have developed the apparatus first, for this testing; they have helped us in the laying out of the equipment for a commercial office, and they have sent employees to Ohio at various times helping us with the carrying out of the instructions and the work of laying out the offices and other work in connection with this commercial work.

Q. Is any of this work with respect to the development of commercial offices referable to unification?

A. No; this is all something entirely aside from unification work.

Q. And it has to do with the future development of the business rather than the past?

A. Yes, that is right.

Mr. Postle: Mr. Kositsky, do you attribute the increase from 2% to 72% solely to the connection you had with the American Company?

The Witness: Yes, sir; they were responsible in showing us how we might give better service. It was our own effort, too, of course. We take a little credit at the same time. The observing, first, is what led us to see that.

[fol. 2722] Sometimes a subscriber had to wait a little longer before he received attention than we thought he should, and it was necessary for us to so arrange the distribution of those calls that the proper party could be reached as quickly as possible.

Mr. McConnaughey: Is that percentage in some one office, or is that the composite experience of all officers?

The Witness: That is in just one or two offices, where we have been pioneers. I am not sure whether it is Cleveland or Cleveland and Toledo. I think it is Cleveland. It is being spread to all the other cities, the larger cities and some of the medium size cities in the state.

By Mr. Burr:

Q. Never mind looking it up now.

Mr. McConnaughey: No, we can take it up at some other time.

By Mr. Burr:

Q. What other improvements, if any, has your company made in the matter of its commercial routine at the suggestion of the American Company?

A. Some time last year the American Company recommended to our company, and sent employees here to show us how to start, that is what we call rotation billing.

Heretofore the bills were usually submitted the first of the month, that is for the exchange service, in advance, and the toll service in arrears.

That meant, of course, that we had to organize our billing department for the peak load and then carry these organizations throughout the month.

It also meant that there were certain days or nearly a [fol. 2723] week, in each month, that many of these employees had to work overtime.

This question of rotation billing means that instead of submitting all the bills at the first part of the month they divide them into about six equal installments, separated by five days each, so one batch will get their bills the first of the month, the next batch on the 6th, and so on, and the load is distributed uniformly.

This has been put into effect in Cleveland, and is now going into effect in Toledo, and is proving very satisfactory. It means that we get out our bills with fewer employees and avoid overtime work.

Q. In what respects did the American Company assist your company in inaugurating that system?

A. The idea was entirely theirs and they helped us in instructing our employees. They also furnished us with the information that a subscriber or the public would want to know in connection with this work, the publicity work.

Mr. McConnaughey: When was that done?

The Witness: In Cleveland it was done—I think it was in December, and in Toledo it is going in right now.

Mr. McConnaugh-y: December of 1925?

The Witness: Yes, sir, 1925.

By Mr. Burr:

Q. Is it necessary to do a certain amount of work with the public before the system can be instituted?

A. Oh, yes; the public must understand what we are doing whenever we change from past practices.

Q. How has the system been of benefit to your company [fol. 2724] in the matter of past due toll charges,—I don't mean past due, but toll charges that have already accrued?

A. The toll month was from the 21st to the 21st, I believe, and bills for the toll for that month were not submitted until the following month and the money was not in before about the 15th, or even after that; so that it made it possible to get our toll receipts in earlier. Also it helped our collection in that if a bill gets old it is more likely to have disputed items.

Q. Has it been of assistance in places where measured service is in existence?

A. Yes, sir; that is in Cleveland and it will be in other cities where there is a measured business rate.

Q. How has it been of assistance in that respect?

A. In the same manner as is mentioned in connection with the toll.

Q. Is this an entirely new thing in the Public Utility business?

A. It is in the telephone business, but not in the public utility business. Take, I believe, the gas and electric light companies, where it is necessary to read meters, they have employees who are out all the time reading meters, and they h-ve been submitting bills in, I imagine, a similar manner. They bill in arrears while we bill our exchange service in advance.

Q. That makes some difference in the difficulty of inaugurating the system with respect to telephone companies, does it not?

A. Yes, sir; we bill both in arrears and in advance.

[fol. 2725] Q. To what extent is the system being extended throughout the company's territory in Ohio?

A. It is the intention to inaugurate this system in all the larger cities.

Q. At the last hearing you mentioned something about some very different improvements that were being made in telephone directories, with the assistance of the American Company; to what extent has that fact been of assistance to your company in the last two years with respect to telephone directory improvement?

A. They have specialists who are continually studying the telephone directories.

We have made quite a number of improvements in our directories in the last two years.

I think it might be well worth while to refer to, say, the Columbus book, which is quite a recent book,—both the old volumes and the new. You will notice the type is larger.

Q. Larger what?

A. Larger type. The listings are more easily read.

Q. To which book do you now refer?

A. The new Columbus book. And where there is a combination of mechanical and manual operation as there is here in Columbus, this bold face designation preceding a

letter or rather preceding a number; for instance a "Randolph," and then there is the number, 4357. The RA is of a heavier type and the rest of the name "Randolph" is in the ordinary type.

It is a development necessary for a station like we have here. You still have to have the name designation for the manual office, and yet you have to provide a means of dial-
[fol. 2726] ing, so that an automatic subscriber, in calling a manual subscriber, can dial.

Now there is also another change; it is necessary to have six pulls, or pull the dial six times, in Columbus. Now if these were all numerals as was the system before the A. T. & T. Company made this development, it would have been necessary to remember six numbers, which would be rather difficult. But this way you seldom have to remember more than four numbers, and the rest are letters. You make your six pulls, and where there is a party line there are seven pulls, and only remember four numerals.

Q. That is to say, instead of remembering six numerals, such as 324579, under the system devised by the American Company you would first dial two letters and then four numbers?

A. That is right.

Q. What company worked out that plan?

A. That was given to us by the A. T. and T. Company and I believe it is entirely original with the A. T. & T. Company; at least it is my impression that it is.

I have another telephone directory here which I believe is of interest, and that is the Akron book. Akron is a somewhat smaller exchange than Columbus and the book is smaller. Yet the size of the type is identical with this Columbus book.

I would, however, like to refer to the classified section which has been in the past more or less difficult to use. The firms listed with an advertisement sometimes will hide other listings that are just of the plain type. The new book, how-
[fol. 2727] ever, obviates that in that it segregates all the listing on the page and then segregates or so arranges the advertisements that there is very little, if any, confusion as there was before.

A comparison of typical pages I think will be illustrative in the Akron classified book.

This is the Akron directory of February, 1925. On page

4 there is a listing here. For instance if you are looking for this auto wrecking concern, you would probably have difficulty finding it. Well, in the new book it would be very easily found, in that it is right here with the rest of the listings.

Mr. Burr: The former Bell Columbus directory may be marked for identification as Kositzky Exhibit A-23-a; the former Columbus Ohio State directory may be marked Kositzky Exhibit A-23-b; and the present Columbus directory may be marked Kositzky Exhibit A-23-c, and they are offered in evidence.

And thereupon the directories above referred to are admitted in evidence on behalf of The Ohio Bell Telephone Company and are herewith submitted and marked Kositzky Exhibits A-23-a, A-23-b and A-23-c, respectively.

Mr. Postle: May I ask a question?

Mr. Burr: Will you please wait until I have finished the offer of the other two books?

Mr. Postle: Yes.

[fol. 2728] Mr. Burr: The former Akron directory may be marked Kositzky Exhibit A-24-a, and the present Akron directory may be marked Kositzky Exhibit A-24-b, and they are offered in evidence.

And thereupon the two directories last above referred to are admitted in evidence on behalf of The Ohio Bell Telephone Company, and are herewith submitted and marked respectively Kositzky Exhibits A-24-a and A-24-b.

Mr. Postle: The new Columbus directory comes to the subscriber, does it not, with a red tag on a string; and also it has in the back of it heavy cardboard containing the ad of one of the local taxicab companies?

The Witness: Yes.

Mr. Postle: Do you consider those two things advantageous over the old directory which did not have them; or do you consider those two things advantageous in this book?

The Witness: It is merely a means of obtaining revenue for that class of advertising. I would not say it is disadvantageous.

Mr. Postle: It is no advantage to the subscriber, is it?

The Witness: Except if he is in a hurry to get a taxicab

he knows that this heavy page in this book is a taxicab company and he can find it immediately.

Mr. Postle: It works to the disadvantage, however, of the rest of the book in the immediate locality of that [fol. 2729] cardboard.

The Witness: I don't believe so. It happens to be between the classified business section and the numerical section. It is a sort of a divider between the two sections of the book. And if the subscriber don't like this tag he could tear it off like this (indicating).

Mr. Postle: That is what they all do, isn't it?

(No reply.)

By Mr. Burr:

Q. In some cities the directories with respect to subscribers' numbers are in one book and the classified subscribers are in another book, are they not?

A. Yes.

Q. Here in Columbus they have been placed in one cover for the convenience of the subscribers?

A. Yes.

Q. What contacts, if any, have you had with the American Company in the preparation of these directories during the last two years?

A. In these directories we have a record of 29 letters.

Q. 29 letters or 49?

A. 49 letters, 7 conversations and 13 trips.

Q. Trips between what two places?

A. Between New York and Ohio; the A. T. & T. people and our people.

I would like to further state in these commercial services of all kinds we have a record of 291 letters and 80 telephone conversations as shown in my exhibit A-20, and 94 trips. And what I have just mentioned here are typical cases of services that come under that contact.

Q. The 94 trips are between New York and Ohio?

[fol. 2730] A. Between New York and Ohio, yes, sir.

Q. How much of this directory work is directly referable to unification?

A. None, unless you might say this Columbus directory is a unified directory; but all the others are directories that have developments made since unification.

Q. And the developments are those which will be applied to future directories?

A. Yes, sir.

Q. When you testified in the toll rate case you mentioned certain other work which the American Company was performing for your company; specifically the handling of matters for your company before the Interstate Commerce Commission and kindred matters; what have you to say as to that service at this time?

A. They are continuing to represent us and handling our matters in Washington, such as income tax matters and other matters of a kind concerning which we may have requests before the Interstate Commerce Commission.

Q. Specifically, does the American Company handle for the Ohio Bell Telephone Company all applications and other proceedings before the Interstate Commerce Commission in connection with purchases and sales of property by the Ohio Bell Company?

A. Yes, sir; after this Commission approves our purchase or a sale it is then submitted to the Interstate Commerce Commission for their approval. Those matters are handled for us by the A. T. & T. Company.

Q. So that it is not necessary for any representative of your company to go to Washington or any place else in [fol. 2731] connection with those matters?

A. That is right. The most recent case was the acquisition of Mentor, a property just outside of Cleveland.

Q. These matters involve not only applications to the Interstate Commerce Commission, but also hearings before that body?

A. Yes, sir.

Q. During the course of your previous testimony, you made mention of the fact that the American Company was handling for your company the work and other negotiations required in connection with the electrification of the Detroit, Toledo & Ironton Railroad in Ohio; what, if anything, has the American Company done in that respect for your company during the past two years?

A. They have continued to handle that for us. The work is of a highly specialized character. The railroad is being electrified. The voltages—I have them here—154,000 volts on the main line; 44,000 volts at the feeder, and 22,000 volts at the trolley, and then it is reduced down to the alternating

current motors within the electric locomotives. We are involved in that; we have wires crossing and paralleling the right of way.

Q. What does the voltage mean to your company?

A. It is disastrous if clearance is not satisfactory, both as to proximity and from an inductive standpoint.

Q. Now what is being done to take care of that factor?

A. We furnished the engineers in New York with the records of our plant along this right of way, and they are now handling this matter with the proper officials in Detroit [fol. 2732] for the protection and clearance of our property.

Q. By your reference to "they" as the ones who are handling the matter, do you mean the representatives of the American Company?

A. I mean the representatives of the American Company, yes, sir.

Q. And with whom are they handling it in Detroit?

A. With the officials of the D. T. & I. Railroad. I might state that the work of electrification is under way, and I think is approaching Lima, that is starting at the end at Detroit.

Q. What, if anything, has the American Company done on behalf of your company in connection with the National Electric Light Association?

A. I believe I mentioned in the last hearing that the Bell System companies were represented by members of the American Telephone and Telegraph Company working with members of the National Electric Light Association for the purpose of standardizing practices where both companies must use the same highways, streets and so forth.

It is true that we have rules and regulations in Ohio that make provision for certain joint usage of the highways and streets and alleys. Nevertheless there were a number of points of difference between the electric light companies and the telephone companies which made the best co-operation sometimes difficult. These committees have now been at work for a number of years and have issued several reports which I mentioned the last time, and in the last two years have issued two additional reports; one was received just yesterday, dated February 15, 1926.

[fol. 2733] A report received May 20, 1924, set up an organization of eleven committees for the carrying out of research work so as to develop ways and means by which the light

companies, power companies and the signal companies could live on the same highways and rights of way with the least amount of interference and with safety to the public.

The A. T. & T. Company are representing the Bell Companies in this work. For instance, in this communication received on May 20th there are the names of D. H. Keyes, H. S. Osborne, H. S. Warren, K. L. Wilkinson, and B. Gherardi, these representing the A. T. & T. Company.

Q. Who is Mr. Gherardi, if you please?

A. He is the vice president and chief engineer of the American Telephone & Telegraph Company.

Q. Are any economies of construction being worked out in connection with these conferences?

A. Yes, sir; there has been a matter that we have had up with a number of the light companies as to the proper heights of poles.

Most of the large companies in Ohio, electric light companies, have their contacts of a financial engineering nature in the East, and in connection with this question of pole heights we were represented, or rather had the representative of the A. T. & T. Company interview the engineers of the electric light companies that also controlled or supervised properties in Ohio, with the idea of eliminating as much superfluous material in the pole as possible.

I have an illustration which shows a pole which was quite commonly used in Ohio where the pole is easily ten feet [fol. 2734] taller than necessary to carry the combined needs of both electric light and telephone companies.

Chairman Marshall: Is that where they have joint use?

The Witness: Yes. We pay for half the cost of the pole, and the pole costs about a dollar per foot of height; in other words, a 40-foot pole would cost about $40,—that is very rough. If the pole is 10 feet too high there is an investment of $10 more than necessary, and we pay half of it.

By Mr. Burr:

Q. Have you one of the bulletins of the engineering sub committee of the Joint General Committee of the National Electric Light Association and the Bell Telephone system; I refer to the one dated May 20, 1924.

A. Yes, sir.

Mr. Burr: It may be marked for purposes of identification as Kositzky Exhibit A-25, and is offered in evidence.

And thereupon the document last above referred to is admitted in evidence on behalf of the Ohio Bell Telephone Company, and is herewith submitted and marked Kositzky Exhibit A-25.

Q. Have you also a copy of the report of the same Joint General Committee with respect to physical relations between electrical supply and communication systems, dated February 15, 1926?

A. I have.

Mr. Burr: It may be marked for identification as Kositzky [fol. 2735] Exhibit A-26, and is offered in evidence.

And thereupon the document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company, and is herewith submitted and marked Kositzky Exhibit A-26.

Q. That bulletin and report represent a part of the work of this committee to which you have been referring, do they not?

A. Yes, sir.

Q. Have you a photograph illustrating the saving in the height of poles, or rather the possible saving in the height of poles referred to in your recent answer?

A. Yes, sir.

Mr. Burr: It may be marked for identification as Kositzky Exhibit A-27, and is offered in evidence.

And thereupon the photograph last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company, and is herewith submitted and marked Kositzky Exhibit A-27.

Q. In what respects, if any, has the American Company given the Ohio Bell company advice and assistance in the matter of foreign wire relations during the past two years?

A. In a number of respects. I failed to mention G. E. C. 1457, shown on page 4 of Exhibit A-1, and also G. E. C. 1760, which is found on page 28 of Exhibit A-1.

These deal with the routine and foreign relations work; also the method of reporting conditions to permit proper [fol. 2736] supervision of this character of work.

Those are general circulars.

Then, specifically, we have had several questions arise

recently where a power company wished to bring its communicating circuit, carried on their high power lines, into their switch through our telephone plant. Of course a special type of protection is necessary, and there are such questions as not only protection, but also interference from noises, that are likely to be carried into our cable plant.

These matters were referred to the A. T. & T. Company just recently and are still under advisement.

This particular question is likely to become more numerous, or these questions are likely to become more numerous, because power companies are extending their transmission lines quite extensively and naturally wherever a signal circuit is necessary to be carried on the same poles, and in connection with these high power lines, it is necessary for them to have communicating service, and where such a pole can be used for both the single and the high power lines, it would be of extreme advantage to the high power company.

However, this question of proper protection carrying these private lines into their switchboards through our plant is one that the A. T. & T. Company are now working on.

Q. In connection with that particular work what contacts, if any, has your company had with the American Company during the past two years?

A. In connection with this work of interference and [fol. 2737] transmission, I have a record of 153 letters and 22 telephone conversations as shown in my exhibit A-20 and 37 visits or trips as shown in exhibit A-21.

Q. What will happen to the telephone business in Ohio, in case some method of obviating high power transmission line interference is not worked out?

A. We will prevent them from carrying these circuits through our cable plant.

Q. What I mean to say is, is it possible for the high tension lines and the telephone lines to exist side by side and to function properly without the means of some protection or some way of obviating the interference.

A. No, there is not.

Q. Is that a live question today?

A. Yes, sir.

Q. I think that is self evident from the rules adopted by this Commission in that connection, which I believe are already a part of this work.

A. Yes, sir; that is order number 72, I believe is the number.

Q. And that is a large pamphlet which the Commission has prepared and published on the subject?

A. Yes, sir.

Q. With respect to certain major additions which your company is making in some of the cities in Ohio, will you please tell the Commission the nature of the work, its purpose and extent?

A. I believe I mentioned in my former testimony the commercial surveys made by the company with the assistance of the A. T. & T. Company in a number of cities in Ohio; also a survey of the State of Ohio made for us, as a population estimate made for us by the A. T. & T. Company.

We are experiencing quite a rapid growth which might indicate that our estimate so far is being met.

[fol. 2738] To meet this growth of population there is of course an additional demand for telephone service.

Last year our estimate for additional telephones in the State was exceeded by somewhat over 2,000. I think we estimated 25,000, and we gained over 27,000. This is for the State as a whole.

Our estimate for the next five years in Ohio is 135,000 new telephones.

To meet this growth we have a number of projects under way. In Cleveland, for instance we are erecting a new building which will cost in the neighborhood of five million dollars. In installing that new equipment, erecting three branch offices, additions to others, and installing equipment in nearly all the buildings in Cleveland, our total estimate of the cost of this work in the next five years beginning with 1926 is over $32,000,000, or $32,500,000.

Q. For what city?

A. For Cleveland. Now in Toledo we also have a number of big projects under way. We are just building a new building in which will be installed equipment of the latest type, and also additions to a number of other buildings.

Our program for Toledo in the next five years is about $8,300.

I might state that for Cleveland our station gain in the next five years is estimated at 53,500; in Toledo, 17,500; here in Columbus, even although we have spent considerable in the past, we have ahead of us additions which are

estimated to cost $7,000,000 in the next five years, with an [fol. 2739] estimated station gain of over 14,000.

In Dayton our program calls for an expenditure of over $3,000,000; in Springfield, $2,000,000; in Akron, $3,000,000; and so on, in all cities practically.

Mr. McConnaughey: Have you made an estimate of the station growth in those other cities?

The Witness: Yes, sir; for Dayton it is estimated at 9,300; for Springfield 950, and Akron 6,900.

By Mr. Burr:

Q. What are you proposing to spend in Youngstown?

A. In Youngstown $3,000,000, with a station gain of 4500 in the next five years.

Q. What is the situation with respect to Canton?

A. In Canton we are just completing, and have spent—or have made quite a number of improvements; a new building, equipment and so forth, and even so, we are estimating an expenditure for Canton in the next five years, of $1,675,000 and a station gain of 4800.

I merely mention this for the reason that in these projects we are continually calling upon the New York engineers and other experts in all departments, for advice and assistance.

Q. By "other experts" you mean what?

A. They may be commercial or traffic.

Q. But all of them are connected with the American Company?

A. Yes, sir.

Q. Proceed; for what kind of advice are you calling on them?

A. For engineering advice, commercial advice, traffic advice and information that Mr. Anthony will touch upon, and [fol. 2740] specifically I can mention in Cleveland and Toledo we are installing a new Number 3 toll board. This is a board recently developed by the A. T. & T. Company and has a number of improvements over the former toll boards.

We are installing in Cleveland also in the new building a panel type automatic equipment. This is an A. T. & T. Company development in conjunction with the Bell Laboratories, I believe.

This particular type of automatic equipment has been in the development stage since 1910. I remember seeing in

that year the first installation in Newark, New Jersey, and we are now getting such installation in Cleveland. It is the latest of that type.

Q. What about the patents covering this equipment?

A. I have not the exact number, but there are hundreds of patents, and thousands of circuits, the development of which was necessary in order to have this equipment.

Q. Who owns the patents, and who developed the circuits?

A. The patents are owned or controlled by the A. T. & T. Company, and the circuits are available to the associated companies and will be installed in this equipment.

Q. You say they are available to the associated companies; where did they originate?

A. They originated in New York, and are given to us by the A. T. & T. Company. In Toledo, Ohio,——

Q. Just one moment, before you refer to that. How does the new equipment which is to be installed in Cleveland compare in cost with the former installation of similar types [fol. 2741] of equipment?

A. It costs less. The improvements that have been made have tended toward decreasing its cost.

Q. Is its efficiency increased?

A. Yes, so far as I know.

Q. Is any unification in contemplation in Cleveland such that these matters concerning which you have testified for Cleveland might be said to be referable to unification or unification plans?

A. No; that unification work in Cleveland was completed about two years ago.

Q. What have you to say with respect to the automatic equipment recently installed in Columbus and about to be installed in such cities as Toledo and Canton?

A. That is an equipment that was not originated by the A. T. & T. Company. It is the Strowger equipment. However, the A. T. & T. Company have made many improvements over this equipment, and we are now installing such an installation in Toledo, completing the one in Canton, and have completed one recently in Columbus.

Q. Do the Toledo and Canton installations involve unification?

A. No, sir.

Q. What is the most outstanding feature of this equipment which the American Company has designed for Toledo

and Columbus with respect to the interconnection of automatic and manual types of equipment?

A. In Columbus, and we will also have in Toledo, both the manual and automatic type of equipment. The A. T. & T. Company have developed an interconnecting circuit or equipment which will permit an automatic subscriber in dialing in exactly the same manner as though he were calling another automatic subscriber, to reach a subscriber on the [fol. 2742] manual system. This is called the Call Indicator Equipment.

Formerly, in the earlier efforts to combine automatic and manual service, it was necessary to have what they call a ring down system. An automatic subscriber would first dial the code., That would connect him with a manual operator. He would then have to repeat his number to the operator who would then complete the call, much the same way as now necessary in making a strictly manual call.

In other words, the operation from automatic to manual involved really two calls or a double operation. That has all been eliminated now with this Call Indicator Equipment.

Mr. McConnaughey: How long has that been available?

The Witness: That has been available for about four or five years.

Mr. Postle: Is that a product of the A. T. & T. Co.?

The Witness: Yes, sir; it was given to us by the A. T. & T. Company. I believe many of these developments were made in conjunction with the Western Electric Laboratories or the Development and Research Laboratories.

By Mr. Burr:

Q. And of course where there has been the combination or unification of the automatic and manual systems, the subscriber having a manual telephone can communicate with one having an automatic telephone?

A. Oh, yes, yes; in other words, the manual subscriber can call either a manual or an automatic subscriber in exactly the same manner as he did, before this other system was connected. Likewise, an automatic subscriber can call [fol. 2743] either an automatic or a manual subscriber in exactly the same manner as he formerly called an automatic subscriber.

Mr. McConnaughey: Is there an operator used in making that connection?

The Witness: From automatic to manual, yes.

Mr. Tolles: No.

The Witness: Yes, but it is handled in this way. If you dial a manual number, say, there is a position called the Call Indicator Equipment. The number will flash in a signal similar to these cab signals, many times used in front of theatres, and she merely plugs into a multiple in front of her and completes the call. In fact you could use a deaf and dump operator in that position. All she has to do is to see.

Mr. McConnaughey: And that operation is reversed when the call comes from a manual subscriber to an automatic?

The Witness: It works a little differently. The manual subscriber will call exactly as now, and the operator will get the order in exactly the same manner as now, and then she will dial. She has a dial on her position, and she will dial right on through, and you get the connection that way.

By Mr. Burr:

Q. Has it been necessary for the Ohio Bell Company to request any service or assistance of the American Company in connection with that installation which you have been describing?

A. Yes. I have in connection with our equipment, problems such as mentioned, and of course other equipment matters.

I have a record of 279 letters in response to specific re- [fol. 2744] quests; 80 telephone calls, and 43 visits in the last two years.

Q. And those are telephone calls, letters and visits between employees of your company and the American Company?

A. That is right.

Q. What have you to say with reference to the development of special circuits?

A. It has been necessary to develop special circuits particularly where you introduce, as we have in Cleveland, this automatic system to work with other offices of a foreign type make of equipment. In Cleveland we have Kellogg and Dean Equipment, and the A. T. & T. Company have handled this development work for us.

Q. What specific thing have they done in order to make the connection between those different types of telephone successful; what have they developed in the way of circuits?

A. They have developed the circuits for us so as to permit us to install in those offices this so-called indicator equipment.

Also we are installing in Cleveland what we call a key indicator equipment. This key indicator equipment has an appearance similar to an adding machine, which is installed in front of each operator, and the operator, instead of dialing a call, say from manual to automatic, merely punches that key and sets up the number in that manner and then the call goes on through.

That development has only been perfected for this type of automatic equipment as we are installing in Cleveland.

[fol. 2745] Q. You have spoken from time to time about circuits, and I think to the ordinary lay mind a circuit simply means two wires carrying an electric current. What do you mean by these circuits which have been perfected by the American Company whereby the different types of instruments are permitted to function together; what is a circuit of that kind?

A. A circuit basically consists of two wires, but it requires apparatus, such as relays, and I believe there are something like 5,000 different makes and kinds of relays. But a proper relay, one or more, must be introduced at one or both ends of a circuit; condensers, lights, resistances and a combination of contacts, in order to make the apparatus work electrically.

Q. Now all those things are involved in the term "circuit" as you have used it?

A. Yes, sir.

Q. And are the circuits always the same, or do they vary in different cases?

A. No; there are thousands of circuits.

Q. And will any one of those different circuits serve a given purpose, or must a particular circuit be chosen for that purpose?

A. Well——

Q. In other words, do you have to work out a particular circuit for each problem?

A. Yes, you do.

Q. Did you have any similar problem in Toledo as the one just described for Cleveland?

A. Yes.

Q. That involved still another type of automatic equipment, did it not?

A. Yes; that is the Strowger type, mentioned.

[fol. 2746] Q. And what did the American Company do in that case?

A. We called upon them to develop proper circuits with the foreign type equipment that we have in Toledo. I believe there are two different types, the Kellogg and the Stromberg.

Q. Is your company still receiving services of this character from the American Company?

A. Whenever requested, yes, sir.

Q. Has the American Company billed you for any of this circuit development work?

A. No; that is included in our 4½% payment.

Q. Is that true of all the other services to which you have been testifying?

A. Yes, sir.

Q. And to which you will testify today?

A. Yes, sir.

Q. Are there any other special equipment services which you have in mind as having been received by your company from the American Company?

A. Yes, sir; I might mention two or three that we are installing. One is the rapid fire toll service in Cleveland. That is for short haul business known as the two-number business.

We are also installing the straightforward trunking in the larger multi office cities, such as Columbus and Dayton, I believe—at least in Columbus, Toledo and Cleveland. And on the toll boards we are going to what is called the combined line and recording. I think Mr. Allen mentioned that, and that will be discussed I think more in detail by Mr. Anthony.

Q. With respect to the rapid fire toll service, when was it first installed in Ohio and where?

[fol. 2747] A. Cleveland was the first installation.

Q. And when?

A. Some time, I think, in 1925, or it may have started in the latter part of 1924.

Q. Where else in the United States, if at all, had it been installed prior to this installation in Cleveland?

A. I think in Detroit.

Q. Is that the only other place?

A. That is the only one that I know of.

Q. With respect to the line and recording toll board, you have one board of that sort in Toledo, as I understand?

A. Yes, sir.

Q. What extension, if any, of those boards to other boards of the State is in process?

A. We are now having manufactured for us such a board for Cleveland and it is the intent to change the boards that are now installed in the other larger cities or where we contemplate new boards, they will be of this type.

Q. What, if anything, did the A. T. & T. Company have to do with the designing and developing of the rapid fire toll service and the line and recording toll board?

A. They furnished us with all the information in connection with this equipment improvement, and also furnished us with advice as requested in connection with our particular problems.

Q. Reference was made by Mr. Allen to the matter of the straightforward trunking. What company, if you know, developed the straightforward trunking?

A. That was furnished us by the A. T. & T. Company; I think it is their development.

[fol. 2748] Mr. Burr: I think Mr. Allen described the matter of straightforward trunking sufficiently so that we will not go into it here, again.

The Witness: I believe Mr. Anthony has some figures on that to show the benefits.

Mr. Burr: I was going on to say that we won't go into it with Mr. Kositzky unless the Commission or Counsel desires.

Q. To what extent, if any, have you found it necessary to confer with the respresentatives of the American Company in the matter of engineering and installing this new equipment to which you have just been testifying?

A. I have a record, shown in Exhibit A-20, of 279 letters, 80 toll calls and also as shown in Exhibit A-21, of 43 visits or trips between the A. T. & T. Company and Ohio Bell representatives.

Q. When you refer to telephone calls and telephone con-

versations between representatives of your company and the American Company, do you mean long distance telephone calls between Cleveland or some other point in Ohio and New York?

A. Yes, sir.

Q. Before leaving the general subject of equipment, is anything to be said on the matter of special services rendered your company by the American Company with respect to private branch exchanges?

A. Yes, sir; we had a great many questions of modifying or converting present private branch exchanges to work with this automatic equipment to be installed in Toledo, and which is now being installed in Canton and Cleveland, and that has been installed in Columbus.

[fol. 2749] On the P. B. X. question we have had a number of a—great many contacts in fact. Our record shows 99 letters, 22 telephone calls and 10 visits between engineers of the A. T. & T. Company and representatives of our company.

Q. And those are all referable to the matter of the private branch exchanges?

A. To the question of private branch exchanges, yes, sir.

Q. Proceed.

A. Another development which I should have mentioned in connection with our equipment installation is one of modification of the power equipment or battery equipment.

Take in an automatic exchange such as we will have in Toledo and Cleveland, the power equipment represents a tremendous investment.

They have furnished us with some developments that will have a tremendous saving in first cost, and also in carrying charges of these batteries.

Instead of having the large units that we have had, we are able to reduce them and, with more continuous charge, carrying a less reserve and are able to immensely decrease the investment in power and battery equipment.

Q. That improvement has been worked out by what company?

A. That has been worked out by the A. T. & T. Company.

Q. And it represents an annual saving in Cleveland of approximately how much, do you know?

A. Roughly about $13,000 a year in Cleveland and about $6,000 in the case of Toledo.

Q. Going back a moment to the matter of private branch [fol. 2750] exchange assistance received by your company from the American Company, was that assistance merely nominal, or did the work of that company result in material benefit to your company?

A. They again helped us to develop the circuits to make these boards so that it would permit us to convert these boards so that they would work satisfactorily with this type of automatic equipment.

Q. You have mentioned the erection by your company of buildings in some of the larger cities; have you had occasion to refer to the American Company any matters with respect to the design of those new buildings during the past two years?

A. Yes. We employ architects who prepare our plans and specifications for our larger buildings. This is particularly true with the building in Toledo, in Cleveland, and has been true in the case of the building at Canton.

We submit these plans after they are prepared, to the A. T. & T. Company. They have there a building department or building specialists, and these men understand the peculiar characteristics of the building to make them best suitable and adapted for telephone use. That is the buildings require certain floor strengths, certain compartments for the carrying of ducts and cables, and also the proper location in the building of one type of apparatus with reference to the other, so that the minimum amount of cabling and circuit work is necessary.

In the case of the Cleveland building, we submitted these architects' plans to their building specialists who had them for several weeks. They then came to Cleveland, and in [fol. 2751] conference with our architect and our building representative they took note and made corrections of the suggestions that were brought out by the A. T. & T. Building expert, so that when the smoke cleared away we found that we had a better job and that we would save $50,000 from the cost of the building as originally planned.

Q. Was this improvement directly under your own personal supervision?

A. Yes, sir, the new building work is handled by my department.

Q. What service, if any, did the American Company

render to your company with respect to the elevator problem presented by the new main building in Cleveland?

A. The Cleveland building will be twenty-two stories. It will be 365 feet in height.

Because of the equipment requirements the ceiling heights are considerably more than the ordinary office type of building.

I think a building of that height would ordinarily provide for perhaps about thirty or thirty-five stories. However this building will only give us twenty-two stories. And we had an elevator problem that we all felt should be checked up by the A. T. & T. Company. We had a recommendation for 10 elevators, and I was not sure whether it was adequate or not, as a telephone building has to have elevators for the purpose of serving employees who come and go at stated hours; for instance, the traffic people come at different periods throughout the day. It is not like a commercial office building.

[fol. 2752] We submitted this to New York and they took this up by checking other buildings—other telephone buildings. The Chicago building was one; the building in Pittsburgh was another; and from their information of the characteristics of telephone buildings they were able to recommend a change from the architects' recommendation in which we put in an elevator of greater efficiency and a saving in first cost of about $100,000. We are getting there now what we think is a very satisfactory elevator.

Mr. Postle: Did they follow your recommendation of 10 elevators?

The Witness: No; we put in eight, and we feel that we can get greater capacity with these eight of this particular type of elevator than with the 10 as recommended.

By Mr. Burr:

Q. As recommended by whom?

A. By the architects' engineers.

Q. And the eight were recommended by whom?

A. They were recommended after the A. T. & T. Company made their studies and that recommendation was concurred in by the architect and his engineers.

Mr. McConnaughey: Was that $120,000 saving included in the $50,000?

The Witness: No, sir, that is in addition. This is in the elevator equipment. The $50,000 was only in the building itself.

Mr. McConnaughey: That is $170,000 altogether on the building?

The Witness: Yes, sir.

[fol. 2753] By Mr. Burr:

Q. Was there any saving as the result of the elevators as finally adopted?

A. We will have a saving in first cost and also in operation in that we have two less elevator employees needed, and the type of elevator requires employees you might say, less experienced, in that the operation of these elevators is simpler. It is what they call a signal control operator. It is the first of its kind in Ohio, and is becoming to be quite a popular elevator.

Q. In what respects did the American Company assist your company in the matter of refrigeration for the building?

A. We had another problem on refrigeration for the building. We require ice machinery for the purpose of refrigeration in the restaurants and cafeterias and also cooling of drinking water system that circulates throughout the building.

The original recommendation was for a 12-ton capacity compressor of a certain type of gas, and a second machine of the same capacity and type, as an emergency. Also the system as recommended required that one of these be in operation twenty-four hours of the day.

That again was submitted to the A. T. & T. Company, and they made a recommendation which was something like this; that we install one 12-ton capacity machine and a second of 6 tons capacity; also to install what we call a storage tank.

This meant a reduction in first cost of about $4000 in machinery, and also instead of operating one big machine twenty-four hours of the day, it was necessary to operate either one or the other of these two machines a part time [fol. 2754] of the day and sending the surplus cooling energy into this refrigerating cooling tank, and during the night hours, and winter hours, the storage tank would supply the cooling medium for the purpose needed. This meant a tremendous saving in operating cost.

Q. In addition to the service rendered your company by the American Company in connection with exchange property please tell the commission in what respects that company has been of assistance to your company in connection with its toll plant during the past two years.

A. We are spending in Ohio or have, in the last four years, something over one million dollars per year in the expansion of the toll plant. We now have about seven miles of toll pole line and about 45,000 miles of open wire circuits.

Q. Toll circuits?

A. Toll circuits, yes. In connection with such a program of course it is necessary that we know the most economical manner in which to expand this toll line plant.

The routes can be expanded with open wire until they reach a certain capacity or the capacity of the line, and then either a second route is necessary or a cable.

We found it necessary to have for Ohio a toll fundamental plan. Such a plan is only made once in say, a period of ten or fifteen years for a company, and of course it is out of the question for us to undertake that without training employees and going through quite a lot of false work in order to make such a study.

[fol. 2755] However, the A. T. & T. Company have two specialists who supervise such work and we have asked them in connection with this toll fundamental plan, and they have furnished us a supervisor who is directing this work in Ohio. It has now been under way about two years and the results of this toll fundamental plan are obvious.

First we had to make an economic survey of the State of Ohio. This is tied in with the forecast of the population of Ohio, the types and characters of the various communities of Ohio, that is commercial, agricultural, mining and so forth, and an estimate of future toll business. Then the routing of that toll business over the most economical ultimate routes. As we could continue to expand, say, over four different routes between two important sections of the state, yet one route may be the proper route and the other three may be improper. So that this toll fundamental plan will tell us exactly where to expand with wire and where with cable, in order to get the most economical plant for the future.

We have reached a point where we know now that of the 150 toll centers that we have, we can dispense with nearly

half of them; that is by having fewer toll centers to handle which the toll business can radiate from instead of the number we now have. That of course will mean an economy.

Also we know that in Ohio——

Chairman Marshall: What do you mean by that; abolish fifty per cent of your toll stations?

The Witness: Toll boards. Take one case we have at [fol. 2756] Kent and Ravenna. They are two towns very close to Akron. Now it is unnecessary to have a toll board at each one of those points, but a toll call from Kent or Ravenna will be switched at Akron where we have trained operators and a large toll board. So that a New York call or a Dayton call or a Cincinnati call can be handled there by operators who handle those calls frequently, rather than by an operator at Kent or Ravenna that would handle such a call infrequently. And the short toll calls in the vicinity of Kent and Ravenna are handled through what we call the 2-number, or A. B. method.

So that small toll boards in nearby towns can be concentrated in say a central zone and then the circuits carried to that point.

The service will be exactly the same; that is the facilities are exactly the same; in fact they will be greater with the concentration of these tollboards.

By Mr. Burr:

Q. What has been the contact between your company and representatives of the American Company in connection with this work; that is, has it been occasional?

A. No. In the first place they have a man by the name of Baker, who has constant supervision over this toll fundamental plan work. Also other questions of cable equipment are handled from time to time as the occasion demands.

Q. Handled by whom?

A. Between the Ohio Bell Company and the proper men and engineers of the A. T. & T. Company.

Q. And in the employ of what company is Mr. Baker?

A. He is with the A. T. & T. Company.

Q. You spoke something about the expenditure in past [fol. 2757] years on toll work amounting approximately to one million dollars a year. Those expenditures do not include equipment, do they?

A. No; that is only for the poles, wire, cross arms and cables.

Q. And what is the estimate of expenditure for that part of the toll work for the next five years?

A. The next five years we estimate an expenditure of about $1,750,000 per year, making over eight million dollars in the five years.

Chairman Marshall: Do you mean by that other question and answer of 50 per cent that you are going to save 50 per cent, or what per cent will you save?

The Witness: I do not know, Mr. Commissioner, just what the saving will be in dollars.

Chairman Marshall: Does that mean a larger and additional equipment at the central boards, like Akron?

The Witness: Yes, sir, it will mean an addition there, and an elimination in other places.

Chairman Marshall: Do you know that in its last analysis it will mean a reduction in the cost?

The Witness: Yes, in the cost and in the operation.

Chairman Marshall: Then it should mean a reduction in toll rates, shouldn't it?

The Witness: I am not prepared to answer that question.

Mr. McConnaughey: This $1,750,000; is that for the next five years? Is that to cover the extension of lines and equipment?

The Witness: Lines. Equipment is not included in that.

We have in Ohio now 250 miles of toll cable.

[fol. 2758] We are planning in the next five years to connect cities such as Columbus, Dayton, Cincinnati, Cleveland, and Toledo, with additional toll cables, adding about 726 miles more of cable. In other words we will form a loop, which is rather interesting, and all the large cities except Cincinnati will be in this loop and connected with a cable. Then this loop of course connects with Buffalo and Pittsburgh and then to New York and then with Detroit, Chicago, Saint Louis and Indianapolis. So that the State of Ohio as we see it now will have, I think, the most complete toll plan, on the completion of this work, of any state in the union.

Q. Before offering the map to which the witness has referred, and which may be marked for identification as Kositzky Exhibit A-28, I would like to ask how many cities are now connected by toll cable?

A. We have the northern tier of cities from Youngstown to Toledo now connected with cable. It includes Sandusky, Elyria, Cleveland, Akron, Massillon, Canton, Niles and Youngstown on the east, and Toledo on the west.

Q. Fremont?

A. Fremont.

Q. Lorain?

A. Lorain.

Q. Elyria?

A. Yes, sir.

Q. Now in the near future what additional cities will be connected by toll cable?

A. Briefly we will carry the cable south from Massillon and Canton to Cambridge; also south from Toledo by way of Findlay, Lima, Piqua and Troy to Dayton and Cincinnati; [fol. 2759] and east and west through Dayton, Springfield, London, Columbus, Newark and Cambridge to Wheeling. At Wheeling on this side of the river we have a number of exchanges such as Martins Ferry, Bridgeport, Bellaire and others.

I would like to mention that the cable plan—the toll cable is the most reliable means we know of in giving toll service. Open wire is more or less subjected to the elements such as wind, sleet and so forth, while a cable line has been known to stand up through the most severe test of weather conditions.

Also all the cities in the State will be more or less benefitted by this cable plan, and those that will not be directly connected with this cable will have circuits to the nearest cable point, and therefore will reach any city throughout the state, or the country for that matter, through the aid of this cable system.

For instance in case we should have a cable failure between we will say Columbus, and Dayton, Columbus will still be able to reach Dayton by way of Cleveland and Toledo.

Likewise, Cleveland has really two routes to Dayton, one by way of Cambridge and the other by way of Toledo, and so on. So that this loop gives us double cable protection.

Q. What is the gross amount of expenditure involved in the toll cable to which you have been testifying?

A. $14,000,000. This is the new work as shown by the dashed line. The solid line represents existing cable.

You will also notice that on the dashed lines are dates.

These are the dates on which those particular sections of [fol. 2760] cable are scheduled for completion.

Mr. Postle: Is that a gross expenditure contemplated for a five-years program?

The Witness: Yes, sir, that is right.

Mr. McConnaughey: For the three-year program the latest date is 1929.

The Witness: 1926, 1927, 1928 and 1929; that is four years, and there is a second cable going from Cuyahoga Falls or Akron to Youngstown. That is scheduled for 1930. However there is a cable there now, so that is merely a relief cable.

Mr. Burr: The map heretofore identified as Kositzky Exhibit A-28 is offered in evidence.

And thereupon the map last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted and marked Kositzky Exhibit A-28.

Commissioner Poor: I would like to ask Mr. Kositzky why Cincinnati seems to be discriminated against.

The Witness: It is rather difficult for us to put Cincinnati on the loop.

Commissioner Poor: What is the matter?

The Witness: They are in one corner of the state. However we extend the cable from Dayton to Cincinnati. We have no insurance or second cable route to Cincinnati in this plan. They will have to depend upon wire for their insurance in case the cable should be in trouble.

[fol. 2761] Commissioner Poor: Isn't Cincinnati one of the largest cities in the State?

The Witness: Yes, sir, it is.

Commissioner Poor: Don't you think you should protect it?

By Mr. Burr:

Q. Is it in the territory of the Ohio Bell Telephone Company?

A. No, sir, it is not.

Commissioner Poor: Shouldn't it be protected with a double insurance, the same as some of the other towns?

The Witness: Yes, sir, and I think it will. After this particular cable reaches somewhere near its working effi-

ciency undoubtedly a second cable will be carried from some point, possibly from Columbus over another route to Dayton, and give us an emergency cable route at that time.

Commissioner Poor: But that is not in the picture now?

The Witness: No, sir, that is not in the picture now.

Chairman Marshall: Does not the Cincinnati and Suburban Bell Telephone Company pay the 4½%?

The Witness: Yes. I might state that they are working with us in this cable plan; at least the section from Cincinnati to Dayton. And this is entirely in accordance with the agreement we have with them. They are in agreement with this plan.

Chairman Marshall: Before you go on, I want to ask another question; from your experience as chief engineer of the Ohio Bell Telephone Company, then as I understand your testimony in relation to the 4½% contract it is this; [fol. 2762] that they are enabling the Ohio Bell Telephone Company to practice economy in both the long distance and the local service; that is as to the telephone world, by virtue of the operation of the contract; is that true?

The Witness: Yes, sir.

Chairman Marshall: Making material savings, I will put it.

The Witness: Yes, sir, their improvements result in savings, yes, sir.

Chairman Marshall: Then I want to ask you; you can answer it if you can or want to; why ought you, in other words,—or why ought the toll charges in Ohio go up over one hundred per cent in the last three or four years? Is that a matter of engineering?

The Witness: It is not a matter or a question, exactly of engineering. However, I can answer——

Chairman Marshall: You testified that you were familiar with what economies are being able to be practiced. You say you are saving right along.

The Witness: Yes, sir.

Chairman Marshall: Well, my own experience, from here to my home town of Sidney is that about three or four years ago I could talk three minutes for 55 cents, and now it is $1.05. How do you account for that?

The Witness: The telephone rates including the toll I do not believe have gone up in the same proportion with the cost of giving the service. If it had not been for these improvements the rates probably would be even higher.

[fol. 2763] Chairman Marshall: But that is the very point. You say in the last three or four years that you have been able to practice economies and are still continuing, by virtue of the benefit you get under the operation of the 4½% contract. Then why should one be decreasing at a great rate and the other increasing over 100%? I just want to know what your opinion is, as an engineer.

The Witness: Well, as an engineer, it is my job to see that our costs are kept as low as possible, and that we avail ourselves of all improvements that tend to low costs and proper operation. And if the rates are now $1.10 where they were formerly 55 cents——

Chairman Marshall: $1.05.

The Wtiness: It is probably because it costs us more to give that service, and it may be that that particular distance under the schedule was not paid. The toll rates in the state as a whole have not gone up in that same proportion and it is just possible that it was a condition peculiar to these two points.

By Mr. Burr:

Q. You don't know, do you, that the Ohio Bell Telephone Company made any money at the former rates?

A. I know that they have not.

Q. To better illustrate the substantial construction of a toll cable lead, have you prepared some photographs of cable recently completed between Cleveland and Toledo?

A. Yes, sir, I have; I have one photograph which shows this cable shown in the upper portion of the map, a cable completed in 1925. This also shows a fixture representing [fol. 2764] a letter H, which is called a loading point. And that transformer-looking pot is what we call a loading pot.

This toll cable, I might state, carries 236 physical circuits and 118 phantom circuits, or a total of 354 talking circuits.

To get the same equivalent in open wire would require four pole lines of 60 wires each.

Q. How frequently do the loading fixtures shown in the photograph occur?

A. About every 6,000 feet we have a loading fixture and about every 50 miles we have what we call a repeater station. Those round circles with a dark segement, in the map, indicate what we call repeater stations.

Q. You are now referring to the map marked Kositzky Exhibit A-28?

A. Yes, sir. Where we have suitable buildings the repeaters are installed in those buildings and where we have not such suitable buildings a repeater station or a separate building is erected. Such a building is located between Cleveland and Toledo, called Bogart, just a few miles south of Sandusky.

Q. Have you a photograph showing such a repeater station?

A. Yes, sir, I have a photograph which shows that Bogart station; also three pictures which show the repeater equipment within the station. This is repeater equipment of the latest type and is the first of its kind that we have installed in Ohio.

Q. What company is responsible for the development of the repeater equipment?

A. This repeater equipment is illustrated in the general [fol. 2765] engineering circular 1554, page 13 of my Exhibit A-1, and was furnished us by the A. T. & T. Company.

Mr. McConnaughey: Mr. Burr, would you mind having him tell us briefly what this repeater is, and how it functions and what it does?

By Mr. Burr:

Q. Will you do that please, Mr. Kositzky?

A. Yes, sir. If you will look on photograph 3, the point marked "A" is a repeater set, the front view. That is a cable or cover that is not removed. Just to the right of that are a series of tubes. These tubes resemble very closely the radio tube, only they are much larger. I will get you the front view now—well in fact that bank—those are the repeaters.

Mr. McConnaughey: On page 3?

The Witness: Yes, sir. I am not sure how many there are, installed, but there are quite a number; there are several banks. We are only able to see one.

To the right, that indicated by the letter "B" is the ringer equipment, the rear view with the covers on.

Picture Four, letter "A", is the repeater bay, and the other equipment is test equipment, frames and so forth.

Photograph 5 shows the power equipment, fuse panels, charging equipment and so forth.

Q. The power equipment is used to charge the batteries that furnish the current for the operation of the station?

A. Yes, sir; the repeater tubes require a voltage of about 120 volts direct current on the grid and 6 volts on the fila- [fol. 2766] ment and power apparatus is necessary to operate those tubes together with power for the ringing equipment and so forth.

Q. What does photograph number six show?

A. Number 6 shows a typical open wire toll line carrying six arms, and with a capacity of 60 wires.

I made a mis-statement that I would like to correct. That Toledo cable has a capacity of 236 physical circuits which would require 7 such pole lines—or rather 8 such pole lines if the capacity of that cable were transferred to open wire.

Between Akron and Cleveland we have two cables, a second cable recently completed during 1925, and the capacity of those cables with open wire I think would be about 14 such pole lines.

It would be almost an impossible condition to find a highway or highways that would carry 14 such pole lines.

In that connection the right of way that we had to acquire in connection with our Toledo cable cost in the neighborhood of $600 per mile.

I have another picture that I thought might be of interest which shows what happens when a sleet storm strikes one of our toll lines. This shows the open wire down, and I happened to find two pictures where the cables in the same storm remained up in the air.

Q. Showing the advantage of what?

A. Of a cable plant over the open wire plant for telephone purposes.

Q. This photograph number 7 represents the condition [fol. 2767] which you found to exist in Ohio?

A. Yes, sir; this happened in or near Cleveland.

Mr. Burr: The photographs to which the witness has been referring are bound in a single volume, which may be marked for identification Kositzky Exhibit A-29.

The volume consists of a fly leaf directly under the cover marked 1, the photograph showing the pole line construction with the H-shaped lead coil fixture.

A second fly leaf marked number 2, followed by a photograph number 2, showing the repeater station at Bogart.

Next is the fly leaf number 3 and the photograph showing the repeater equipment on the first floor of the Bogart Repeater Station.

This is followed by fly leaf number 4 and photograph showing the testing equipment and main distributing frame on the first floor of the same station; followed by fly leaf number 5, and that being followed by photograph number 5, showing the power equipment in the basement of the Bogart Repeater Station.

Then follows fly leaf number 6, photograph number 6, the latter showing toll pole line carrying 52 wires.

That is followed by photograph number 7 showing the open pole lines, showing the effect of sleet storms on open wire construction as against cable construction.

The Exhibit is offered in evidence as Kositzky Exhibit A-29.

And thereupon the document last above referred to is [fol. 2768] admitted in evidence on behalf of The Ohio Bell Telephone Company, and is herewith submitted and marked Kositzky Exhibit A-29.

Q. Have you computed the cost of this cable construction versus the open wire construction in order to show the savings due to the cable construction?

A. Yes, sir; the combination of repeaters and loading makes possible cable transmission almost any distance between any points.

Q. Who worked out the plan of that?

A. That was given us by the A. T. & T. Company. I have shown in another exhibit what the wire would cost if it were not for repeaters and loading, applied to cable, as compared with the cost of the cable.

Q. Will you refer again to Mr. McConnaughey's question with respect to the use and purpose of repeaters, and explain to him a little more fully, if you please, the purpose of these repeaters?

A. A repeater is what you might call a voice amplifier. Voice currents after they traverse a wire a certain distance become very weak. They are then received at one of the repeater stations which are located about 50 miles apart and there amplified by introducing energy at that point with the apparatus shown, sending out a much stronger

current—stronger voice current than when received. In other words, it steps it up thousands of times, or hundreds of times. It is a booster.

Then again it travels along the wire until it reaches a point where it is about the minimum, and then it again [fol. 2769] boosts it by means of such a repeater.

The repeater principle came first and then the radio followed. This is really radio equipment amplified by the A. T. & T. Company, and I think since 1909 or 1910—along there.

Mr. McConnaughey: What do these loading pots do?

The Witness: These loading pots, Mr. McConnaughey, are the introduction of what we call inductants, and counteract interference which is met particularly in a cable with what we call capacity.

There are two main defects, or rather things that impair transmission. Resistance is one, but that is the lesser of these two evils. Capacity is the more severe of the two. It not only impairs the transmission but distorts it.

Now the invention of the loading coil is the introduction of what we call inductants which neutralizes the effect of capacity and that then leaves only the question of resistance which is the less evil of the two.

The basic patents were applying this factor of inductants to telephone circuits both as to the specific use of these coils and the quantity, or the amount of inductants, to add. They are nothing more than just a small coil, very harmless and insignificant looking. However, it did a wonderful thing to the art of transmission.

Mr. Burr: I was just going to interject here that the matter of the use and purpose of the induction coil and repeater was gone into at some length by some of the witnesses who testified with respect to the license contract [fol. 2770] services in the toll rate case. My recollection is that the testimony there showed how the art of long distance telephony had developed as a result of the discovery first of the loading coil and then of the repeater.

Mr. McConnaughey: That is true, I think.

Mr. Burr: Unless the Commission or counsel want us to go into that matter further at this time we will not do so.

The Witness: I believe I also, in my former testimony, introduced a map which showed the transmission that was

possible before the invention of the loading coil and then after the invention of the loading coil, and also the repeaters.

Mr. McConnaughey: Yes, that is true.

Mr. Burr: It was to testimony of that kind that I referred.

Q. Are there any other services furnished to your company by the A. T. & T. Company?

A. Yes, sir, there are quite a number of other services that I might mention, but I think the foregoing are just some examples of the principal services that we have received in the last two years.

Q. Have you a general engineering circular on the subject of the telephone repeater?

A. Yes, sir.

Mr. Burr: It may be marked for identification as Kositzky Exhibit A-30, and is offered in evidence.

And thereupon the document last above referred to is admitted in evidence on behalf of The Ohio Bell Telephone Company, and is herewith submitted and marked Kositzky [fol. 2771] Exhibit A-30.

The Witness: General Engineering Circular Number 1554 issued November 15, 1924. It has some 300 odd pages, and a number of diagrams. This very completely explains this latest repeater as shown in the Bogart station.

Chairman Marshall: I think that will be a good place to stop.

Mr. McConnaughey: Mr. Kositzky, is this proposed cable loop to be entirely the property of The Ohio Bell Telephone Company, or is it joint with the A. T. & T. Company?

The Witness: It is joint with the Long Lines.

Mr. McConnaughey: The Long Lines of the A. T. & T. Co.?

The Witness: Yes, sir, they take an interest in the cable on the east and west routes and we have the largest interest in the north and south routes.

Mr. McConnaughey: Do you know what the interests are?

The Witness: No, I do not; I can get them for you.

Mr. McConnaughey: They have an interest in the entire loop?

The Witness: Yes, in the entire loop, but we have some toll cables in which they have no interest.

Mr. McConnaughey: But I am speaking of this loop now.

The Witness: That is right.

By Mr. Burr:

Q. What would be the cost of the American Company's share of the loop?

A. The entire loop, as I estimate it, will cost about four- [fol. 2772] teen million dollars of the work yet to be undertaken, and the American Company's interest would be about eight million dollars or ten million dollars, and our proportion about four million dollars.

And thereupon the further hearing of this matter was adjourned until Wednesday, March 17, 1926, at 10 o'clock A. M.

[fol. 2773] Wednesday Morning Session

March 17, 1926.

And thereupon the further hearing of this case was resumed pursuant to adjournment.

Present:

Same parties by their counsel as at previous session.

And also G. A. Kositzky, resuming the stand, for further direct examination, continued his testimony as follows:

Examined by Mr. Burr:

Q. With respect to the special engineering and other services, telephone calls, letters and special trips of the General Staff on behalf of Your Company, have you made any comparison so as to determine how the number of them is averaging and has been averaging for the last two years as compared with previous years?

A. Yes, I have.

Q. What does the comparison show?

A. It shows an increase when reduced to an annual basis, as for instance the general engineering circulars, commercial traffic circulars and specifications have, since the formation of The Ohio Bell Telephone Company averaged 204

per year. In the last two years, they have averaged 278 [fol. 2774] per year.

Q. That is the 204 per year was the average up to 1924, was it not?

A. Yes.

Mr. McConnaughey: From 1919?

The Witness: From the formation of The Ohio Bell, which was in November, 1920, I believe.

Mr. Burr: 1921.

The Witness: No, that is the unification; the formation of The Ohio Bell was in 1920,—or an increase of 74 per year.

The letters have also increased, from November, 1920, to January, 1924, they averaged 543 per year. Since then, that is from January 1st, 1924, to January 1st, 1926, they averaged 815, an increase of 272 per year.

The telephone conversations, such as we have been able to get a record of show an increase in the same periods of from 74 per year to 136 per year or of nearly double.

The special services, including visits and trips of employees to New York or from New York to Ohio—that is the A. T. & T. employees have increased from 182 per year to 223 per year, or 51 per year.

Q. Have you compiled that comparison in the shape of an exhibit?

A. Yes, I have.

Mr. Burr: It may be marked Kositzky's Exhibit A-31 and is offered in evidence.

And thereupon the paper writing so last above offered is introduced and admitted in evidence on behalf of The [fol. 2775] Ohio Bell Telephone Company and is herewith submitted marked Kositzky's Exhibit A-31, and made a part hereof.

Q. In your testimony in the toll rate case in 1924, you evaluated the so-called "instrument service." What is the instrument service?

A. The A. T. & T. Company furnished The Ohio Bell Telephone Company transmitters, receivers and induction coils, and I have evaluated what that service is worth to

the Ohio Bell Company were The Ohio Bell Company to furnish this equipment themselves.

Q. Is the service of the same character as that existing at the time of your testimony in the toll rate case?

A. Yes.

Q. Has the evaluation of the service been made in the same manner as that valued by you in the toll case?

A. Very much along the same lines, yes.

Q. Is the evaluation in the form of an exhibit?

A. Yes, sir.

Q. For what period has the evaluation been made?

A. For the period of June, 1925. That is, I took the instruments as of that period and evaluated the services based upon figures as of that time.

Mr. Burr: The exhibit showing the evaluation may be marked Kositzky Exhibit A-32 and it is offered in evidence.

And thereupon the paper writing so last above offered is introduced and admitted in evidence on behalf of The Ohio Bell Telephone Company and herewith submitted [fol. 2776] marked Kositzky Exhibit A-32 and made a part hereof.

Q. Will you explain it briefly?

A. The first cost per set—a set being a transmitter, one receiver and one induction coil—is $4.50 and the annual cost or annual charges per set is 21 per cent. That is made up, interest 8 per cent; administration 1 per cent; depreciation 8; maintenance 2 and reserve for contingencies 2, making a total of 21 per cent.

Q. Why have you used those particular per cents?

A. They are the customary percentages that are used in our engineering studies.

Q. On what are they based?

A. Based upon experience, yes.

Q. Now, proceed if you please?

A. For every station, we have 6 per cent, which is made up of sets used at the switchboards of the operators, sets that are on vacant premises, intransit and so on, which total about 6 per cent additional sets for every telephone station, so that the average number of sets of instruments per station is 1.06.

Applying the annual cost of 21 per cent against the first cost of $4.50—and that of course increased to take in this

6 per cent additional—gives the annual cost per station, $1.002.

Q. What is the source of the item of $4.50 for the first cost of a set of instruments shown in line 1?

A. That is the reproduction cost of these sets, the market—you might say—it is not the market price; it is below [fol. 2777] the market price.

Q. That $4.50 is something less than the market price of those sets?

A. Yes.

Q. Proceed.

A. In addition to the 6 per cent which represents instruments that are in vacant premises, operators sets for testing and other purposes, we also carry—that is by the Western Electric Company—a reserve of 6 per cent, that is for stock.

Q. Why do you carry that particular reserve?

A. That is to cover continuity of supply.

Q. Well, what has your experience shown as to the necessity of such a reserve?

A. That such a reserve is necessary so as to have instruments whenever they are required by our plant to be.

Q. Does that stock that you speak of represent the actual stock carried by your company?

A. Well, we don't carry those, this is carried by the Western Electric Company.

Q. That is what I mean by carried by our company?

A. Yes, yes, so far as I know that is what the Western carries.

Q. I think that is covered by other testimony?

A. Yes.

Now, evaluating this 6 per cent stock on a basis of a per station would be 27 cents additional to be added to the figures up above, but before I do that, I would like to convert that into the carrying charges or annual charges. The annual charges of stock material is 11 per cent. That is made up of the interest, 8, the administration of 1 and [fol. 2778] the reserve for contingencies of 2, there being no depreciation or maintenance on stock or materials in the storeroom. That applied against the value per station of this stock would give 3 cents per station additional to be added to the $1.002 above or a total annual cost per station of $1.032.

Q. Right.

A. Now, the average number of sets of instruments in Ohio is 493,358——

Q. When you say in Ohio, you are referring to in the territory of your company?

A. Yes, of the Ohio Bell Company. Now, the number of stations as of June having these sets are 464,013. Taking the total number of instruments, 493,000 and evaluating that first cost by increasing it on a 6 per cent, which is the stock instruments, $4.50 per set, gives $2,353,318.00, which is the first cost of instruments furnished by the A. T. & T. Company.

Applying to the number of stations which are equipped with instruments, 464,013, by the carrying charges as shown in item 8, of $1.032 the $478,861.00 is the total annual charge or value of the instrument service to The Ohio Bell Company.

Q. That represents the amount which your company would have to pay in your judgment for that sort of service if it did not get the service from the American Company?

A. Yes.

Q. In addition to the instrument service, have you evaluated in dollars other services to The Ohio Bell Company due to new developments and service furnished by the American Company and made available to your company?

[fol. 2779] A. I have. I have another exhibit which is prepared along similar lines as that submitted two years ago which evaluates the improvements furnished us by the A. T. & T. Company.

Q. Yes.

A. In other words, if those improvements had not been available to The Ohio Bell Company, the total investment is shown at that reduced to an annual cost, an annual charge basis.

Q. To what class of property are the savings shown in your exhibit, limited?

A. These are limited to the exchange and toll plant, or the plant service, only.

Mr. Burr: The exhibit on the subject may be marked for identification Kositzky Exhibit A-33 and it is offered in evidence.

And thereupon the paper writing so last above offered is introduced and admitted in evidence on behalf of The Ohio

Bell Telephone Company and is herewith submitted marked Kositzky Exhibit A-33, and made a part thereof.

Q. Before discussing the exhibit, I will ask you whether or not the exhibit shows all of the savings to The Ohio Bell Company resulting from the developments made and other services furnished by The American Company to your company?

A. No, sir.

Q. That is the question covered by your previous answer, but I would like to have you answer it direct.

A. No, it does not. There are many others that I did not evaluate. There are some that I have mentioned [fol. 2780] throughout my testimony yesterday, such as directory savings and a great many other improvements in savings that I might list, but some of those are savings that we are making because of our transmission maintenance and feeder, developed by the A. T. & T. Company and furnished by the A. T. & T. Company permits us to make routine checks of our transmission qualities and that in turn can be evaluated. Those I have not included. There are the savings on the new equipment, such as the toll board that I mentioned yesterday as going into Cleveland and Toledo; repeater savings, the new repeater costing less, also requiring less space, the savings in construction—there are a number of them, the U bar, that was mentioned yesterday as against the former type of construction. The terminal savings, anchor rods and I will say that there are quite a number. Standardization of bills has effected quite a saving to The Ohio Bell Company in that fewer bills are necessary now to carry out than as formerly.

Q. Then in short, your exhibit 33 evaluates only some of the savings?

A. Yes, they are the more important ones.

Q. Will you please take up the exhibit and tell the Commission how you have arrived at the savings illustrated by it, taking up first the savings in first cost and then the savings in annual charges?

A. The first is the fine wire cable on the 455 pair 19 guage cable. Prior to a certain period, we only had available to use the 19 gauge cable. We were furnished with the fine wire, the 22 gauge and later the 24.

[fol. 2781] Q. Furnished by whom or by what?

A. Furnished us by the A. T. & T. Company; also the

maximum size cable was the 300 pair, 19 gauge, that was the maximum the A. T. & T. furnished before the 455, 19 gauge cable, so I have taken those improvements and reduced them to the standard as was known to us before these savings were made and applied them to the plant as it existed in June, 1925. I have used as a basis, Mr. Williams' inventory and appraisal; the inventory shows the quantities by classes and the appraisal shows the unit costs.

Q. I think that these improved cables have been covered by the testimony of other witnesses, but let me ask you what organization was responsible for the development of them?

A. The A. T. & T. Company; at least they furnished us with the information.

The saving in Item 1 of fine wire cable in 455 pair, 19 gauge cable, evaluates to $10,604,088.00; and the annual charges, or charges on that using the customary engineering percentages for maintenance, depreciation, interest and so on, gives a value of $1,760,826.00, as the saving in annual charges. That is on an annual basis.

The next item is duplex cable. I might explain that the duplex cable is one that permits of carrying phantom circuits; that is to every two physical pairs we are able to use a phantom circuit or we get three circuits for every two physical circuits.

Q. That also was a development of the American Company, was it not?

A. Yes, and furnished to us in their general engineering [fol. 2782] circular which I think was listed in the testimony of two years ago. That duplex cable, had we not had that development, it would have been necessary to have had physical circuits for those that we are now using as phantoms, and the additional cable investment that would be required would be $480,437.00 and that reduced to an annual cost basis is $78,921.00.

The item 3 is the lead-antimony sheath. Formerly we had a lead-tin alloy. The price of tin becoming almost—going higher and higher, the A. T. & T. Company found that a 1 per cent antimony and 99 per cent lead would give the same characteristics in the cable sheath as the three per cent tin alloy.

For instance, a pure lead sheath is entirely unfitted for

the protection of telephone cables; the cables are made up of copper, paper insulated, and if moisture gets into those cables, naturally that would ruin their effectiveness. Pure lead crystallizes particularly after use. It was found originally that a three per cent tin and 97 per cent lead would prolong the life or at least remove that defect. The tin price now is 57, plus, cents per pound. Realizing the cost of this tin, the A. T. & T. found that one per cent antimony and 99 per cent lead would give a suitable or a satisfactory sheath. The antimony today costs 17 cents per pound. You take three pounds of tin at 57.12 cents per pound, it is $1.71 plus for 100 pounds of alloy. If three pounds of tin are replaced with two pounds of lead at 8 cents and one pound of antimony at 17 cents there is a saving there of the dif- [fol. 2783] ference between $1.71 for three pounds of tin and 33 cents, the two pounds of lead, and the one pound of antimony or $1.3836 per hundred pounds of sheath. Computing the amount of armor or sheath there is in the plant as of June, 1925, which has the antimony alloy and evaluating that on the basis of $1.38 plus per hundred pounds of sheath gives a saving in first cost of $518,611.00 or an annual charge of $74,408.00.

Q. The next item is that of copper-steel twisted pair wire; how did you arrive at the savings in first cost and the annual charges for that item?

A. Formerly the Bell system used a copper wire. The A. T. & T. developed a steel-copper clad wire, the steel-copper clad costing less per foot than the former Number 14 copper twisted pair.

Q. Was the former Number 14 copper twisted pair generally in use before the development of the copper-steel wire?

A. Yes, yes, that was something more elaborate. I think even before then, they used two single wires which were even more costly than that, but I didn't consider those as I think there are very few of those left in Ohio,—merely took the comparison between the 14 copper and the 17 copper clad. That difference then in cost applied to the amount of 17 copper clad wire as shown in the inventory gives a saving in first cost of $428,450.00 or annual saving of $132,820.00.

The next item, Number 5, is the saving due to the introduction of the plant repeaters and loading coils. I believe I explained yesterday the application of the loading coils

[fol. 2784] and also the repeaters. In the territory where the open wire is possible and where it would be necessary if the repeaters and loading were not available to us, I have taken and substituted the open wire lines to give the same capacity as there is in a cable. For instance, I think I mentioned yesterday, that the cable capacity between Toledo and Cleveland to get the same facilities in open wires would require eight pole lines of six arms each, taking those eight pole lines of six arms each in which would be necessary to keep the same transmission equivalent to this repeater and loaded cable and also substituting for similar cables within the city limits or where aerial construction is not practical, with a larger gauge under-ground cable and evaluating that, taking the difference between the plant as it exists today and a plant of the type necessary to give the equivalent transmission with the open wire and the unrepeated cables would amount to a saving in first cost of $10,327,635.00, and the annual saving of $1,551,274.00.

Q. How have you evaluated the savings shown under the item marked phantoms in line 6?

A. Phantoms are a development that we received from the A. T. & T. Company; that is where it is possible on two open wire circuits, by means of phantom transpositions and phantom equipment at either end, and which involves only a nominal cost, we were able to create a third circuit.

Q. By what company was the phantom development made?

A. Furnished us by the A. T. & T. Company and I believe it is their development. The two obtain the equipment in [fol. 2785] physical circuits which would involve more copper, additional poles and crossarms; to give us the same facilities as we now obtain over the open wire phantoms, would involve an additional investment of $4,702,041.00, or a carrying charge of $887,674.00.

Item 7 shows an improvement today as made and furnished us by the A. T. & T. Company in the local switchboard cords. Prior to this development of the so-called tinsel cord, which consists of a number of bronze ribbons of very—a wrapping of a number of ribbons to form a circuit—and there are three such circuits in a cord, as against what was used formerly of the steel cord, effected quite a material saving in maintenance. For instance, the tinsel cord, the original steel tinsel cord had a very short life—

I think only four months—while the improved bronze tinsel cord had a life of two years. The tinsel cord as recently developed costs 69 cents against 43 cents of the original cord, but because of the longer life of 6 times longer and the repairs necessary, which in the old steel cord was once a month and within the tinsel cord now our experience shows once in eight months, effects a saving to The Ohio Bell Company of $277,240.00 over that if steel cords were in use.

Q. Is that an annual saving?

A. Yes.

Q. Well, the next item is that shown in Line 8, improved line and cut off relays, how do you arrive at the saving of that amount?

A. We were furnished by the A. T. & T. Company the improvement in the line and cut-off relays. This is an [fol. 2786] electro-magnet used in the central offices on both toll and exchange boards and the old magnet being a rather bulky one with a gravity weight, while this new magnet which answers the same purpose has not alone better transmission qualities, but also is less costly, takes up less space and has a lesser and has a lower maintenance.

Taking the relays in service as of June, 1925, if those were of the old type relays, our investment would be increased over that today by $141,166.00 and the carrying charges applied against that saving in first cost would be $31,659.

In item 9 I show a saving in first cost annual charges of a cheaper contact metal. Prior to the world war, contact metals were of platinum. At that time, I think the platinum had about the same cost or value as gold. However, platinum, during the war, was almost impossible to obtain, so that it was necessary to obtain a substitute. The A. T. & T. furnished us with a substitute which was palladium, had an alloy of palladium, an alloy of—I don't know the details of, but it also has palladium. That contact metal is very much cheaper in cost than platinum and taking the increase in equipment cost necessary for contact metals in Ohio, with platinum over the material that we have would show an increase in first cost of $432,058.00, or a saving in annual charges of $79,930.00.

Q. The summary is what?

A. A summary of these savings, first, in first cost of these

nine items is $27,834,486.00, and in the annual cost or annual [fol. 2787] charges, $4,874,752.00.

Commissioner Maullar: Mr. Kositzky, are not most of these items upon which you mention a saving, available to the independent or non-association companies at this time?

The Witness: No, they are not—most of them are, yes, but not all of them. I think they can obtain the fine wire cable. I am not sure whether they have used very much duplex cable. I know that when I first came in contact with the Ohio State plant, they had very few, if any, phantoms and no loading at all, no repeaters, and I know of no 1200 pair, 24 gauge cables or I know of no 455 pair, 19 gauge cables.

Mr. McConnaughey: The question is, are they available to them, could they get them?

The Witness: I imagine they could get some of these, yes.

Commissioner Maullar: That is, you have not the exclusive right to purchase and use the items which you have enumerated in your saving in first cost column?

The Witness: Not of all of these. I don't know if the independents could get this new contact metal as I believe that is a secret alloy that the Bell Company had the exclusive use of. I know this, that the equipment that we are now removing here in Columbus, this automatic equipment, all the contacts there are platinum. I think it is estimated there is something like $60,000.00 worth of platinum, just in that equipment alone.

[fol. 2788] Q. Are you familiar with the preparation of what is known as the provisional estimate of The Ohio Bell Telephone Company, or commonly called its budget?

A. Yes.

Mr. McConnaughey: Mr. Burr, will you let me interpose a question right there? What is the relation between this exhibit and the one that you introduced in the toll rate case? What was the difference? Have you simply applied these savings to the plant as it was in June, 1925 rather than the date that you used in the other exhibit?

The Witness: Yes, this is 2 years later, and also it is changed upon the inventory as submitted before this Commission.

Mr. McConnaughey: But it is worked out in that same way?

The Witness: Yes.

Mr. McConnaughey: Except that you used the plant as it was in 1925 rather than as it was in 1923?

The Witness: That is right.

Mr. McConnaughey: Yes.

The Witness: Yes.

Mr. Burr: Will you read the last question and answer, please.

(Previous question and answer read as follows: "Question: Are you familiar with the preparation of what is known as the provisional estimate of The Ohio Bell Telephone Company, or commonly called its budget?" "Answer: Yes.")

Q. How often are the estimates prepared and for what [fol. 2789] period? A. Every year we prepare a provisional estimate for the following five years. We anticipate or try to anticipate all of our construction needs based upon commercial forecasts which in turn can be based upon the growth and population and the development of the territory, within the Ohio Bell Company's territory.

Q. What, if you know, is the provisional estimate of the capital expenditures of The Ohio Bell Telephone Company for the years 1926 to 1930 inclusive?

A. That is in round numbers $77,000,000.00.

Q. That amount has been arrived at on the basis of definitely-made estimates has it?

A. I don't know just what you mean by that; it is our very best estimate of what we will require in the next five years.

Q. That is it exactly.

Mr. Postle: Is that figure seventy million?

Mr. Burr: Seventy-seven.

The Witness: Seventy-seven.

Q. In connection with this five year program of expenditure by your company, for which the sum of $77,000,000. has been estimated, have you any idea what that amount will be if it had not been for the development of the fine wire cable, toll cable, phantom circuits and other services which you have mentioned that The American Company furnished to your company?

A. Yes. Taking the improvements as we know of them today and not anticipating any future improvements or not

allowing for any future improvements, which undoubtedly will be made, I have evaluated, taking the articles as shown [fol. 2790] in this five year provisional estimate of cable and wire, equipment and so on, and evaluating what additional outlay of gross expenditures would be necessary if we had not these improvements——

Q. What would the additional expenditure amount to?

A. Over the five year period or as I say to 1920, taking the fine wire cable development, the lead-antimony sheath, the parallel drop wire which I mentioned yesterday, which is what we will use from now on, the duplex cable, the repeaters and loading, the improved switchboard cords, the relays, the contact metal, the phantoms, the instrument service, the improved loading coils which was mentioned by Mr. Rhodes and which we will use from now on, also the reduction of cable sheath mentioned by Mr. Rhodes all of which cables from now on will be of that type, this double ended guy rod which I mentioned yesterday and the 600 pair fuse pot which was also mentioned yesterday and the type C terminal—these improvements evaluated a saving in first cost amounting to $17,096,000.00; in other words, our budget would be increased by that amount or we would require over $34,000,000. in the next five years instead of 77.

Q. What would be the additional annual charge due to this increased expenditure of seventeen million?

A. Applying the annual charge percentages as explained in Exhibit just above which would amount to $2,957,565.00 in annual charges as of the year 1930.

Q. Have you evaluated the savings in first cost and in annual charges for the five year period?

A. Yes.

[fol. 2791] Mr. Burr: The exhibit showing the evaluation may be marked for identification Kositzky Exhibit a-34 and it is offered in evidence.

And thereupon the paper writing so last above offered is introduced and admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted marked Kositzky Exhibit A-34 and made a part hereof.

Q. In computing the savings in first cost and in annual charges, have you followed any different method with re-

spect to Exhibit 34 than that followed in the case of Exhibit 33?

A. The same method, the same basis of figures except that I have taken the quantities as shown in our five year program.

Commissioner Poor: Mr. Kositzky, haven't you already paid for the information which will enable you to make these savings in the next few years?

The Witness: I don't just exactly know what you mean. We are paying every year in the shape of a four and a half per cent. for service rendered. I really took such expenditures as we see now that we will need in the next five years and evaluated them on the basis of what that would have been if these improvements would not apply.

Commissioner Poor: Yes, and I understand that you estimate that you will be able to save this amount of money in the next few years by reason of the fact of information given to your company by the A. T. & T. Company some time in the past?

[fol. 2792] The Witness: Well, I don't just exactly believe I see your point.

Commissioner Poor: Well, you claim that the A. T. & T. Company has rendered services in the past to the Ohio Bell Company which will enable The Ohio Bell Company to effect these savings in the future?

The Witness: Yes, yes, they have—the improvements that they have given us when applied to——

Commissioner Poor: Now, haven't you already paid them for that information through the four and a half per cent. that you have been paying them in the past?

Commissioner Maullar: And if in the next five years the result of the information obtained in the last five years has reduced it that much on your estimate for the next five years, if you continue to pay that, hadn't your budget for the next five years ought to be similarly reduced before the end of the five years?

The Witness: Well——

Mr. Tolles: It seems to me if the Commissioners please, that is rather a legal than an engineering question.

Mr. McConnaughey: He is an engineer.

The Witness: We are receiving improvements from them right along and improvement service.

Chairman Marshall: You say today, "as known at the

present time and does not include future developments." What Mr. Poor is asking why should they be a credit for seventeen million and two million, in saving in first cost, and saving of annual charges, when as a matter of fact the [fol. 2793] saving is caused by what they have done up to this time? That is what you say?

The Witness: This exhibit merely shows that if these improvements were not available to use, if we had to expand the plant in the next five years on the basis of prices that exist before improvements were furnished us we would have to expand seventeen million dollars in gross cost.

Q. When you referred to future developments not anticipated, you don't mean that you do not expect some?

A. Oh, no.

Q. Wait a minute, you do not mean that you do not expect any future developments, do you?

A. No, I do not. We expect developments right along.

Commissioner Maullar: Well, then, if the developments in the last five years have produced a saving of moment, should not the development produce the proposed budget under the present improvements under which you base your savings.

The Witness: I imagine that the seventy-seven million may be reduced if any improvement, additional improvements are furnished us in the next years.

Q. One reason your budget is as low as it is is because you have taken into consideration the savings?

A. Yes.

Q. Do you know any other source from which your company may receive services such as those rendered by The American Company, other than from the American Company?

[fol. 2794] A. I do not.

Q. Do you know of any way that those services could be secured by your company at the amount paid for them to the American Company?

A. No.

Q. As a summation of the savings to which you have testified and as inclusive of certain other services which will be covered by two subsequent witnesses, have you prepared an exhibit showing the evaluation of those services, not only in first cost but in annual charges?

A. Yes.

Mr. Burr: It may be marked for identification Kositzky Exhibit A-35.

And thereupon the paper writing so last above referred to is for the purposes of identification marked Kositzky Exhibit A-35.

Q. And I will ask you to point out the savings that have been covered by your testimony, reserving the items that will be covered by other witnesses?

A. Item 1 is the instrument service shown in Exhibit A-32 of two million——

Mr. Tolles: Your Exhibit A-32.

The Witness: Yes, my exhibit A-32, of first cost of $2,353,318.00; the saving in annual charges of $478,861.00.

Item 2 is the plant savings as detailed in my exhibit A-33 of saving in first cost of $27,634,486.00, and annual charges of $4,874,752.00.

Item 3 is one of traffic savings to be testified to by another [fol. 2795] witness, in which it shows first cost savings of $932,300.00, and annual charges, savings, of $1,321,146.00.

Item 4 is the accounting savings, which are shown as savings in annual charges of $100,343.00, a grand total of savings in first cost of $30,920,104.00——

Mr. Tolles: Well, I don't think you understand the question; which of those items were prepared by you and which by somebody else?

The Witness: Items 1 and 2, are those that I have testified to.

Mr. Tolles: That was the question that he asked you. Items 3 and 4 by other witnesses?

The Witness: Yes.

Mr. Burr: Kositzky Exhibit A-35 is offered in evidence with the understanding that items 3 and 4 will be covered by separate witnesses. The purpose of the exhibit is merely to summarize in convenient form the various savings.

And thereupon the paper writing so last above offered is introduced and admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted marked Kositzky Exhibit A-35 and made a part hereof.

Mr. Burr: Will you stand aside for a moment if counsel have no questions to ask.

Mr. Tolles: Mr. McConnaughey, do you have any questions to ask?

Mr. McConnaughey: I think not right now.

[fol. 2796] And thereupon the witness was temporarily excused.

[fol. 2797] And also C. P. Cooper, called on behalf of the Ohio Bell Telephone Company, being first duly sworn, testified as follows:

Examined by Mr. Burr:

Q. You are the Mr. Cooper who as Vice President and General Manager of The Ohio Bell Telephone Company in 1922 testified with respect to the proposed service connection charges of the Ohio Bell Telephone Company?

A. I am.

Q. The number of that case is 1728 on the dockets of the Commission. Are you the Mr. Cooper who as subsequently President of The Ohio Bell Telephone Company, testified on February 8th, 1924 on the subject of the toll rates and tariffs proposed by The Ohio Bell Telephone Company?

A. I am.

Mr. Burr: We offer in evidence all of Mr. Cooper's testimony in the two cases referred to, namely, Number 1728, the service connection charge case and Number A. U. R. P. 124, the toll rate case.

Q. What position do you occupy with The Ohio Bell Telephone Company at the present time?

A. Its president.

Mr. Burr: Will the Commission or counsel require any further qualification on Mr. Cooper's part—I will ask one more question——

Mr. McConnaughey: I assume that he has grown brighter [fol. 2798] and smarter in the last two years.

Mr. Tolles: We will concede that.

Q. How long have you been president of The Ohio Bell Telephone Company?

A. Since November, 1923.

Q. At the hearing in the service connection charge case on February 2nd, 1922 and subsequently in that same case con-

siderable testimony was offered and exhibits introduced in evidence in support of The Ohio Bell Telephone Company's proposed service connection charges. Are you familiar with the testimony in that case and the exhibits offered in the same case?

A. Yes, I am.

Mr. Burr: We offer in evidence all of the testimony of the witnesses on behalf of The Ohio Bell Telephone Company in the service connection charge case, Number 1728, also exhibits introduced in evidence by them; and also all the evidence introduced by or on behalf of The Ohio Bell Telephone Company in the toll rate case. Part of the evidence in the latter case has already been offered in evidence, but it will do no harm to make a blanket offer of it again. The offer includes all of the exhibits offered in the toll rate case on behalf of The Ohio Bell Telephone Company in connection with The——

Mr. McConnaughey: That is not offered as a part of Mr. Cooper's testimony, but just as a part of the records.

Mr. Burr: Yes, I offer it at this time merely because we are going to talk about some of the things here that are talked about in the record in those cases.

[fol. 2799] Q. In the service connection case, certain proposed charges for service connections, moves, changes, and for the restoral of service, were proposed by the Ohio Bell Telephone Company were they not?

A. Yes, they were.

Q. Is the need for the service connection charges as an integral part of the rate structure of your company as great as or greater today than they were originally suggested in that case?

A. The need of those charges is greater today because *of* the volume of business handled by the company is much larger than it was at that time.

Q. Do the definitions given on Pages 18, 19 and 20 of the service connection case record, apply with equal force to the charges proposed by you to be made under the head of service connection charges in the present case?

A. Yes, they do.

Q. Are those service connection charges intended to cover

part and the same expense as described at Pages 18 and 19 of the record in that case.

A. Yes, they are intended to cover the same classes and items of expense referred to in the testimony.

Mr. Burr: By the expression "that case" as used in the evidence—the reference is to the service connection charge case.

Q. Are the charges proposed now for service connection charges the same as those proposed to be charged in the service charge case?

A. Yes, they are.

Q. Have you an exhibit showing those charges?

A. Yes, I have prepared an exhibit showing the proposed service connection charges, move charges, change charges [fol. 2800] and restoral of service charges.

Mr. Burr: It may be marked for identification Cooper Exhibit A-1, and is offered in evidence.

And thereupon the paper writing so last above offered is introduced and admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted marked Cooper Exhibit A-1 and made a part hereof.

Q. Are these service connection charges shown in your Exhibit A-1, those which you and your company are now asking the public utilities commission of Ohio to make effective?

A. Yes, Exhibit A-1 shows the service connection charges, move charges, change charges and restoral of service charges that we are now asking the Commission to make effective in connection with this case.

Q. Are the costs incurred in connection with new installation, re-installation, re-connects, dis-connects and removals, incurred and accounted for in the same manner, as is described in the service connection charge record at Pages 19 and 20?

A. They are, yes.

Q. Do the same conditions apply to the service connection charges today in the territory of your company as is referred to at Pages 21 to 24?

A. Yes.

Q. Inclusive, of the record in the service connection charge case?

A. Yes, the same conditions apply, too.

[fol. 2801] Chairman Marshall: Mr. Cooper, just one question: I don't recall how you refer to—what is the class under service connection charge case, class of what exchange, 1, 2, 3, 4 and 5—what does that mean?

The Witness: That refers to the size of the exchange, Mr. Chairman, and is shown in the schedule filed at the time the hearing was held.

Class 1 exchanges are those under one thousand stations; Class 2 are those from 1000 to 6000; Class 3 from 6000 to 18,000; Class 4 from 18,000 to 75,000; and Class 5 over 75,000.

Chairman Marshall: That is 75,000 stations?

The Witness: Yes, 75,000 stations.

Q. Do service connection charges serve to minimize discrimination in the telephone rate system today in the same manner and for the same reasons as are shown in the testmony in the service connection charge case on Pages 25 and 26.

A. Yes, they do.

Q. In the explanation of the charges and of their purpose and effect today, the same as shown at Pages 27, 29 inclusive of the record in that case?

A. They are the same today, yes.

Q. Is the basis of the charges the same as stated at Page 48 of the record in that case and do the facts stated on Pages 49 to 51 apply with the same effect today as then?

A. Yes, they do.

[fol. 2802] Q. Is there any difference between the steps incident to installations, re-installations, re-connects, disconnects and removals, as covered by your schedule introduced in evidence today?

A. No, the same.

Q. As compared to those described in your testimony in the service connection case including your Exhibit Number 1 referred to at Page 59 in that case?

A. The same steps and the same movements are necessary today as those described in Exhibit Number 1 to which you refer.

Q. Are you familiar with the contents of your Exhibit Number 2 in the service connection case?

A. Yes, I am.

Q. Do these principles illustrated by that case and your

explanation of the exhibit made in that case apply with equal effect today as at that time?

A. Yes, they do.

Q. In the 5th line from the bottom of Page 61 in the service connection case, there appears capital "L5" tell the Commission whether or not that should be "15"?

A. It should be read "15".

Q. Are you familiar with Your Exhibit Number 3 in the service connection charge case?

A. Yes, I am.

Q. Do the principles illustrated by that exhibit and your explanation exist today and apply today as then?

A. Yes, they do.

Q. Is the same thing true of your Exhibits Numbers 4, 5, and 6 in the service connection case?

A. It is.

Q. Tell the Commission whether or not station removals are taking place today substantially in the same manner as [fol. 2803] shown in your Exhibits Numbers 7, and 8 in the service connection case?

A. Yes, they are taking place today in the same manner as at the time this exhibit was prepared except that in the aggregate the number of station movements is much larger because the number of stations served is much greater today.

Mr. McConnaughey: The rate of changes is about the same?

The Witness: Yes, substantially the same.

Q. Is that illustrated by any part of your Exhibit A-1?

A. Page 2 of Exhibit A-1 illustrates that point. It shows for the year 1925 the extent of the station movement and its relation to group for the year. The total number of stations installed including installations, re-installations and re-connections during the year was 146,268.*00*; the total number of stations taken out including dis-connects and removals was 118,082. The stations in per station gain is 5.19.

Q. What is that per station in to per station gain mean?

A. That is the number of telephones installed or re-connected by station net gain in the system. That is we must install, or we did install during 1925 5.19 telephones for every station gained and the number served by Ohio Bell Company——

Mr. McConnaughey: That was 5.38 in the previous exhibit.

The Witness: Yes, in Exhibit Number 7 it was 5.38 for a five year period.

[fol. 2804] Q. You are now referring to an exhibit Number 7 in the service connection case?

A. Yes, that covered the five year period ending January 1, 1922. The comparison of those two exhibits illustrates the increase in the volume of work handled by the company; for the five year period ending January 1922, the total number of stations installed was 409,785. During 1925, the corresponding number of stations was 146,268.

Q. Do you remember your Exhibits 9, 10, 11, and 12 in the service connection case?

A. Yes, I do.

Q. Tell the Commission whether the expenses illustrated in those exhibits are being incurred by your company today in substantially the same manner as shown in those exhibits and as re-counted in your testimony with respect to them?

A. Yes, the same items of expense are being incurred today and in the same manner as described at the time these exhibits were filed.

Mr. McConnaughey: The same amounts?

The Witness: I can't say as to that, Mr. McConnaughey. These amounts were based on a careful analysis of work handled at that time; that involved a detailed record of a number of miscellaneous items that are not ordinarily separate under our accounting practice. We have not had opportunity to make a similar study at this time so that I can't testify as to the exact amounts, but I can say that the same items of expense are being incurred and in the same manner as they were found at the time these studies were made.

[fol. 2805] Q. Will there be any material variation?

A. No material variation, no. The costs incurred at that time were so much in excess of the service connection charges proposed to be made effective that we didn't feel it was necessary or worth while at this time to go through another detail analysis of those costs.

Q. Do you recall the contents of your Exhibits 13, 14, 15 and 16 in the service connection case?

A. Yes, I do.

Q. Does your testimony and Exhibit Number 13 referred at Page 75 of the record in the service connection case on the subject of wiring loss apply in principle to the item of wiring loss today?

A. Yes, it does.

Q. In your exhibits 14 and 15 in this case, record, pages 76 to 81 inclusive, you illustrated the discrimination experienced or suffered by the long-time-users of telephones in the absence of service connection charges; I will ask you whether in the absence of such charges today a similar discrimination exists against the long-time-user?

A. Yes, it does, the same sort of discrimination will always be found where there is no service connection charge in effect.

Q. Does the principle illustrated by your Exhibit Number 16 in the service connection case, record page 82, apply with equal force today as at that time?

A. Yes, it does.

Q. Will you explain a little further the principles illustrated by your Exhibits 15 and 16 in the service connection? [fol. 2806] A. Exhibit 15 was prepared to illustrate the amounts paid by subscribers for what might be termed regular telephone service, depending upon their length of service as subscribers, and assuming that during the period for which service is retained at a given connection the cost of the service connection is first deducted from the monthly exchange rates.

Exhibit 15 shows the cost in the column headings for period of service retained starting first with three months; the next column six months, and so on up to 24 months.

On the next line, there is shown a monthly exchange rate of $3.75. On the second line the expense for the service connection making a cost which was found by analysis at that time to be $9.81, and dividing that by the number of months' service was retained. For the subscriber who retained service three months, the amount per month would be $3.27 and so on across the exhibit until we come to the columns for the subscriber retaining service 24 months, we find that the monthly amount would be 41 cents.

On the last line is shown balance or a difference between the monthly rate and the pro rata monthly amount applicable to the service connection expense. This difference of amount the subscriber really pays for what we might call the regular telephone service—the handling of calls

The three months' subscriber pays per month $3.75 for his service. Of that amount $3.27 is required to meet the [fol. 2807] service connection expense leaving 48 cents as the amount he pays for the handling of his telephone calls. Going over to the 24th months' subscriber, the amount to be deducted from his monthly exchange rate to apply toward the service connection expense is 41 cents, leaving a balance of $3.34 as paid by him for the handling of telephone calls.

So we find that without a service connection charge, the short-term subscriber, the man who retains his service at one location for a relatively short length of time pays much less for his service than the stable subscriber who retains service for a relatively longer period.

If that exhibit were expanded and extended to a longer period of time, we would find that the amount representing the sum paid per month for regular telephone service would gradually approach the month rate which I assume here is $3.75.

Exhibit Number 16 illustrates the way that discrimination is cleared up by the application of a service connection charge. The exhibit is arranged in the same manner and using the same monthly rate for service.

On the second line, I assume that a service connection charge of $4.00 is in effect and applying the portion of that to the monthly rate depending upon the length of time for which service is obtained and adding that to the monthly rate for service, we get on Line 3 the total amount paid by the subscriber for the service rendered.

In this instance, we find that for the man who retains his service three months, he pays a monthly rate of $3.75; [fol. 2808] one third of his service connection of $4.00 is $1.33, making the additional payment per month of $5.08. For the subscriber who retains his service 24 months on line, we have the same $3.75, the monthly rate; on the second line, 17 cents, that is the pro rate share of the $4.00 service connection charge and the sum of those on Line 3 is $3.92, so we find that with the service connection charge in effect, the long-term subscriber pays a smaller total per month than the short-term subscriber and that there is no longer the discrimination against the long-term subscriber that we find on Exhibit 15.

Q. At pages 82 and 83 of the record in the service con-

nection case, you testified to the cost of moves, changes; what have you to say on the subject of those costs at the present time?

A. Those costs are being incurred in the same manner as was described at the time that testimony was introduced and the volume of work handled has increased considerably, in practically the same proportion as the number of stations installed as shown on Exhibit A-1, Sheet 2.

Q. So that there has been an increase in the expense due to moves and changes?

A. Yes.

Q. Since your testimony?

A. There has been a considerable increase in the gross expense to the company for handling that kind of work.

Q. That expense is due in particular to what factors—that increasing expense?

A. The increase in that expense is largely due to the way our large cities are spreading out and developing on the [fol. 2809] outskirts. The coming of the automobile together with the improved highways has led to a very active residential development around all of our large cities; that is particularly noticeable around such cities as Cleveland and Columbus, Toledo, Dayton, Akron and Youngstown, Canton and so forth; the people are moving out of the congested sections and locating farther away from the centers. They are also acquiring at the new location larger properties. The man who a few years ago lived say on one of the streets in the Nineties, just off of Euclid Avenue in Cleveland, now moves out the Shaker Heights, or even farther out than that. He generally acquires in his new location from one to three to four acres of ground, whereas he formerly had a fraction of an acre.

Everyone knows of the remarkable rate of building development during the past several years. This suburban activity and the increasing building development has resulted in an increase in the number of outside moves handled by the telephone company for subscribers changing their location from one point to another.

Q. Has the large increase in apartment houses in the cities increased the number of moves and changes?

A. Yes, it has.

Q. Do you find that people move more frequently from

one apartment to another than formerly they moved from one house to another?

A. Yes, I think we do. I happened to overhear just a few days ago a statement that was made by one prospective tenant going through a new apartment house in Cleveland, [fol. 2810] that one said, "You moved into a new apartment just a year ago, didn't you?" She said, "Oh, yes, but we move into a new apartment each year."

Q. What is your estimate of the gross revenue to be produced by the service connection charges and is your estimate embodies in an exhibit?

A. My estimate of the gross increase in monthly revenue from the proposed service connection charges, the charges for moves and changes, and for the restoral of service as shown at the bottom of Page 1 of Exhibit A-1 is $36,955.00 per month.

Mr. Burr: The exhibit to which the witness refers may be marked for identification Cooper Exhibit A-1, Pages Numbers 1 and 2 and is offered in evidence.

And thereupon the paper writing so last above offered is introduced and admitted in evidence on behalf of the Ohio Bell Telephone Company and is herewith submitted marked Cooper Exhibit A-1, Sheets 1 and 2 and made a part hereof.

Q. Tell the Commission whether or not any capital charges are included in the figures for the expense caused by service connection charges referred to in your testimony?

A. No, no capital charges are included in those items.

Q. In general, does all of your testimony in the former service connection charge case apply in principle today with the same force and effect as in 1922 when you testified in that case?

A. Yes, it does.

[fol. 2811] Q. You have already shown that the total gross amount to be realized from the proposed service connection charges is $443,460.00; that is to say twelve times——

A. Twelve times $36,955.00.

Q. Yes. What was the expense in 1925 to your company for the charges incurred by your plant department, chargeable to the station removals and changes account

which you reported separately in account 607 on the company's books.

A. The total of the expenses involved in the work handled by the plant department alone and charged to Account 607 during the year 1925 was $842,264.00; that amount is exclusive of any expense charged to fixed capital account, neither does it include any of the expenses incurred in connection with handling service connections, moves, changes, disconnections and so forth, for work handled in the commercial department, in the traffic department or in certain branches of the plant department. In other words, this $842,000.00 covers only a part of service connection expense.

Q. Does Account 607 involving the expense of $842,264.00 include the cost of or charges for any work not associated with the establishing, moving or discontinuing of subscribers' services.

A. No, it does not include any items of expense that are not associated with those transactions to which you refer.

Q. And I believe you have already said $842,264.00 does not include all of the expenses incident to service connections and disconnections?

[fol. 2812] A. Yes. This $842,000.00 is only a part of the original expense incurred by the company for handling service connections and the associated work.

Q. Do you know by how much that amount would have to be increased in order to cover all of the expenses incident to service connections and disconnections?

A. I know that it would be increased by probably 100 per cent, that is the total expense to the company for the year 1925 would be about twice this $842,000.00—at least that much. That statement I base on our analysis of costs incurred at the time these detailed studies were made and applying to this cost today the ratio of the items found at that time.

Q. Have you with you——

Chairman Marshall: It is twelve o'clock. We will recess until 1:30.

And thereupon a recess was taken until 1:30 o'clock P. M. of same day.

[fol. 2813] Wednesday Afternoon Session

March 17, 1926.

And thereupon the further hearing of this matter was resumed pursuant to recess.

Present:

The same parties by their counsel as at previous session.

And also CHARLES P. COOPER, resuming the stand, continued his testimony as follows:

Examined by Mr. Burr:

Q. Mr. Cooper, have you with you a copy of the annual report of The Ohio Bell Telephone Company for the year ending December 31, 1925?

A. Yes, I have.

Mr. Burr: It may be marked for identification Cooper Exhibit A-1-A and it is offered in evidence.

And thereupon the printed pamphlet so last above offered is introduced and admitted in evidence on behalf of the Ohio Bell Telephone Company and is herewith submitted marked Cooper Exhibit A-1-A and made a part hereof.

[fol. 2814] Q. The statements in the report I assume are true to the best of your knowledge and belief?

A. They are.

Q. Have you prepared for the purposes of this case a statement of operations for The Ohio Bell Telephone Company setting forth the actual revenues and expenses for the year ending, 1925?

A. Yes, I have.

Mr. Burr: The statement may be marked for identification Cooper Exhibit A-2 and it is offered in evidence. It consists of two sheets numbered respectively Sheets Numbers 1 and 2.

And thereupon the paper writing so last above offered is introduced and admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted marked Cooper Exhibit A-2 and made a part hereof.

Q. Calling your attention to Sheet Number 1 of your Exhibit A-2, will you please explain to the Commission the source of the items shown on that sheet taking each line separately?

A. Sheet Number 1 is an income statement for the year ending December 31, 1925, showing the actual revenues and expenses of the company and the rate of return for the operations during that year on the fair value of the property as of June 30, 1925.

On Line 1 is shown the plant and equipment reproduction cost new as of June 30, 1925, $130,280,722.00.

On Line 2——

Q. Just a moment——

[fol. 2815] Chairman Marshall: Where did you get that?

Q. What is the source of that figure?

A. That is taken from Mr. Williams' appraisal—inventory and appraisal of the property as of June 30, 1925.

Q. In evidence in this case?

A. Yes.

Q. Proceed.

A. On Line 2 is shown the plan and equipment, present condition value as of June 30, 1925, also taken from Mr. Williams' appraisal, which is in evidence in this case, amounting to $117,493,083.00.

On Line 3, the working capital, including supplies, also taken from Mr. Williams' appraisal, $6,350,000.00.

On Line 4, cost of establishing business as testified to by Mr. Schneider, $20,768,158.00, making a total present condition fair value as shown on line 5, $144,611,241.00.

On Line 6, is shown the telephone operating revenues for the year 1925 as taken directly from the company's books amounting to $29,967,001.00.

On Line 7, is shown the net non-operating revenues for the year 1925, associated with the items of property included in the appraisal as of June 30, 1925; the net non-operating revenues associated with those items of property for the year 1925 were $120,234.00. That amount is less than the amount shown in the income statement of the company as a whole for the year 1925 by——

Mr. Tolles: In the annual report?

The Witness: In the annual report on Page 9, by

$225,986.55. The difference is those items of net non-operating income associated with property not included in the [fol. 2816] appraisal as of June 30, 1925.

On Lines 9 to——

Q. What kind of property would that be?

A. Property such as real estate no longer used in connection with the telephone business and carried in Account 111 pending disposition of it; investments in securities, stocks of other companies and items of that sort.

Q. Yes. Proceed.

A. On Lines 9 inclusive of Sheet 1, of Exhibit A-2 is shown the actual expenses for the year 1925 as taken directly from the company's books.

On Line 9 is the total maintenance amounting to $9,799,946.00.

Q. When you say these are taken from the company's books, do you mean that the money was actually expended as shown in these amounts?

A. Yes, I do.

Q. Proceed?

A. On Line 10, the traffic expenses for 1925, $7,516,642.00.

On Line 11, commercial expenses $2,299,331.00.

On line 12, general and miscellaneous expenses $976,134.00.

On Line 13, uncollectible operating revenues, $88,155.00.

On Line 14, taxes assignable to operations, $2,590,970.00.

On Line 15, rent deductions, $570,563.00.

On Line 16, amortization of landed capital, $59,293.00.

The total on Line 17 of telephone operating expenses [fol. 2817] and deductions for the year 1925 is $23,901,-034.00, leaving a net income as shown on Line 18 for the year of $6,186,201.00.

On Line 19 is shown the rate of return for the year 1925, of 4.28 per cent.

Q. To what extent have the books and accounts of your company as reflected in the amounts shown in your Exhibit A-2, Sheet Number 1 been kept in accordance with the unified system of accounts prescribed by the Interstate Commerce Commission and concurred in by the Public Utilities Commission of Ohio?

A. All of the books and accounts have been kept in accordance with the Interstate Commerce Commission's system of accounts for telephone companies. The books have

been audited for the year 1925 and in our annual report for the year 1925, on Page 9 appears a copy of the income statement with the auditor's certificate at the bottom certifying that the balance sheet and income statement are in accordance with the books and in his opinion correctly set forth according to the system of accounts prescribed by The Interstate Commerce Commission the financial position of the company on December 31, 1925 and the results of operation for the year.

Q. Then for the year 1925, the rate of return to The Ohio Bell Company on the fair value of its property as it existed on June 30, 1925 was what?

A. 4.28 per cent.

Q. Turning to Sheet Number 2 of your Exhibit A-2 will you please discuss the various items pertaining to the property values and amounts indicated on that sheet?

[fol. 2818] A. Sheet 2 is an income statement for the year using the net income for the year 1925, bringing the property value, the fair value of the property down to December 31, 1925 and adding to the net income for the year 1925, the improvement in net income to come from rates already made effective and from the service connection charge and other contemplated changes in exchange rates.

On line 1 is shown the plant and equipment reproduction cost new June 30, 1925, $130,280,722.00, the same as 1 on Sheet 1.

On Line 2, plant and equipment, present condition value as of June 30, 1925, $117,493,083.00.

On Line 3, working capital including supplies, $6,350,000.00.

On Line 4, cost of establishing the business $20,768,158.00.

Down to that point, the amounts shown correspond to those on Sheet 1 of Exhibit A-2.

On Line 5 is shown the net additions to plant and equipment from July 1, 1925 to December 31, 1925, as taken directly from the company's books and amounting to $6,768,258.00.

The total fair value as of December 31, 1925, is shown on Line 6 in an amount of $151,379,499.00.

Q. Now, the difference between that total and the total shown on Exhibit A-2 Sheet Number 1 Line 5 lies in the net additions to plant and equipment from July 1st to December 31st, 1925, shown on Line 5 of Sheet Number 1.

[fol. 2819] A. Yes, it does.

Q. On Line 7 of Sheet Number 2 you have included the amount of $6,186,201.00, which represents the net income for the year 1925 as shown on Sheet Number 1, have you not?

A. Yes, Sheet Number 1, Line 18.

Q. On Line 8 of Sheet Number 2 is shown the improvement in net income from rates effective subsequent to January 1, 1925, and not reflected in the previous line; please explain what that item includes and why it is entered on this statement.

A. The amount shown in Line 8 as improvement in net income from rates effective subsequent to January 1, 1925, not reflected in Line 7, totalling $417,804.00 is made up of all of the changes in rates made subsequent to January 1, 1925, and not fully reflected in the 1925 revenues. It includes——

Q. Not reflected at all is it?

A. Well, the amount shown here as improvement in net income is not reflected at all.

Q. Yes.

A. In the revenues.

Mr. McConnaughey: Why isn't it reflected in the revenue?

Mr. Tolles: Some increases have gone into effect since January 1st.

The Witness: Perhaps I can explain it this way, Mr. McConnaughey. We filed recently a schedule of unified rates in effect in Columbus——

Mr. McConnaughey: Since January 1st, 1926?

The Witness: Yes.

[fol. 2820] Mr. McConnaughey: I see.

The Witness: Those rates went into effect March 1, 1926.

Mr. McConnaughey: I see.

The Witness: And I have included the amount of that increase in revenue in this total year, $417,804.00.

Mr. McConnaughey: As if it had been in effect in 1925.

Mr. Tolles: He is giving.

The Witness: Yes, this would reflect a full year's amount for those particular rates.

Mr. McConnaughey: For the number of subscribers that they would apply to in 1925?

The Witness: No, for the number of subscribers as of the end of 1925.

Mr. McConnaughey: Yes.

The Witness: Now, in the same manner every increase in rates made effective during 1925 has been worked out and included in this item of $417,804.00.

Q. In line 9 is included an amount representing the improvement in net income from contemplated service connection charges?

A. Yes, that is the improvement that will result to the company from making effective the contemplated service connection charges, expressing it on an annual basis.

Q. You, in order to arrive at the total amount, computed for 12 months the month amount to be received from service connection charges shown in Sheet 1 of your Exhibit A-1 [fol. 2821] did you not?

A. Yes, I computed the annual amount and then deducted from that the items that will have to come off of the revenue before we can get at the net improvement to the company, such as the state excise tax, the license contract payment to The American Company, the Federal Income Tax and other items of that kind.

Q. In Line 10 is indicated improvement in net income from contemplated changes in private branch exchange rates; have you prepared an exhibit setting forth the details which go to make up the amount indicated in Sheet Number of Exhibit A-2.

A. Yes, a separate exhibit has been prepared to show the contemplated rates for private branch exchange service, in which the amount shown here on Line 10 as improvement of net income from those contemplated changes is derived amounting to $178,826.00.

Mr. Barr: The exhibit may be marked Cooper Exhibit A-3, and it is offered in evidence.

And thereupon the paper writing so last above offered is introduced and admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted marked Cooper Exhibit A-3 and made a part hereof.

Q. On Line 11 of Sheet Number 2 of Cooper Exhibit A-2, is indicated the improvement in net income from contemplated changes in other exchange rates; have you an exhibit showing how that amount is arrived at?

A. Yes, I have an exhibit consisting of—I don't know how [fol. 2822] many sheets.

Mr. Burr: It may be marked for identification Exhibit A-4.

The Witness: 22 sheets.

Mr. Burr: Consisting of 22 sheets.

The Witness: Yes.

Mr. Burr: And it is offered in evidence.

And thereupon the paper writing so last above offered is introduced and admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted marked Cooper Exhibit A-4 and made a part hereof.

Q. Have you another exhibit indicating contemplated changes in monthly rates for semi-public telephone service, which is included in the total amount shown in Line 12 of Cooper Exhibit A-2, Sheet 2?

A. In Line 11.

Q. In Line 11 I should say?

A. Yes, I have prepared another exhibit showing contemplated changes in monthly rates for semi-public telephones.

Mr. Burr: It may be marked for identification Cooper Exhibit A-5 and offered in evidence.

And thereupon the paper writing so last above offered is introduced and admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted marked Cooper Exhibit A-5 and made a part hereof.

[fol. 2823] Q. Will you please explain the basis of the three exhibits, A-3, A-4 and A-5, telling the Commission how you arrive at them and the method by which the rates and amounts indicated in the exhibit were determined upon?

A. All of the contemplated changes in rates as shown in these Exhibits contemplate that the service connection charges and charges for moves and changes and for restoral of service as shown in Exhibit A-1, are to be made effective. On that basis, the rate schedules as shown here represent classification in our judgment of the exchanges, the best arrangement of the classes of service to be furnished and the most equitable apportionment of the revenue

representing on Sheet 2 of Exhibit A-2 among the subscribers, to whom service is to be furnished.

Q. You are now referring to the rates and charges shown in Cooper Exhibit A-3, A-4 and A-5?

A. Yes, I am.

Q. Proceed.

A. So that fundamentally it is a combination of rate schedules and classifications and grouping of exchanges to produce the amount of revenue reflected here on Sheet 2 of Exhibit A-2, coming down to the total net income on an annual basis of $8,056,298.00, so as to distribute the necessary revenue in the most equitable manner among all of the subscribers, to furnish the most complete and the most satisfactory service to the subscribers and to at the same time encourage and obtain the maximum development of the service. It contemplates continual development in service so that every additional subscriber whose connection to [fol. 2824] the system may add to the value of service to subscribers as a whole may find a rate and a classification of service that will meet his requirements.

The preparation of a complete schedule of this kind is not in our opinion a matter of exact science or a problem that can be worked out — mathematical formula. It is necessary to take into account all of the considerations I have referred to and in addition to them apply the best judgment we can bring to bear on the problem, based on our experience in operating telephone service in our territory.

The purpose of the rates is of course to produce the revenues that the company requires to meet its operating expenses, to provide for depreciation of the property and for a fair return on the property. It is just as much in the interest of the subscribers as in the interest of the company, to have sufficient revenue to provide a fair return because without a fair return on the property, it is impossible for the company to attract the additional capital constantly required in making additions and extensions to the plant and equipment, to care for additional demands on the part of the public, and in our judgment it cannot be said that the company is fulfilling its obligation to the public and to its subscribers unless it is able to provide the additional service for the public as those demands come along.

The service must be made available to the maximum number of people; the classifications must take into account

[fol. 2825] the use to be made of the service by different groups of subscribers; the structures must be arranged so as to prevent as far as possible needless waste of the service, and over all, must provide for classifications and rates that will enable any prospective telephone subscriber to find the class of service that will meet his requirements, and a rate that will be within his need.

Q. In your judgment, will the proposed rates produce a full and fair return upon the fair value of the property?

A. No, they will produce less than a fair return on the fair value of the property.

Q. Are these the rates—that is to say the rates contained in Cooper's Exhibit A-3, 4 and 5—the rates which you and your company now asks the commission to fix as the rates to be charged by your company?

A. Yes, they are the rates that we now ask the Commission to fix as the rates to be charged by our company.

Q. Yes.

A. Perhaps I ought to add this explanation: That on Exhibit A-4, which consists of the 22 sheets, and which is a tabulation of all the contemplated changes in monthly rates, for the principal kind of exchange service, by classes of exchanges—on that statement we have shown the principal classes of service, the rates contemplated by the company and now asked of the Commission, the present rates, and in the last column for each exchange, the gross change in monthly revenue resulting from the application of the proposed rates to the service as it existed on December 31, 1925. [fol. 2826] Increases of revenue are shown in this column in black and decreases in red.

Q. Will you now take up the remaining lines of Cooper Exhibit A-2, Sheet 2 and tell the Commission how you arrived at the figures shown in those lines?

A. On Line 10 of Sheet 2 of Cooper Exhibit A-2 is shown the improvement in net income from contemplated changes in private branch exchange rates, annual basis, amounting to $178,826.00. That is the improvement in net income of the company on the application of the contemplated rates as shown on Exhibit A-3, on the bottom line of which is shown the gross increase in monthly revenue from the contemplated rates as $18,328.00.

On Line 11 is shown the improvement in net income from the contemplated changes in——

Mr. Tolles: What was the last figure you gave?
The Witness: $18,328.00.
Mr. Tolles: What is that, I don't see that here?
The Witness: That is the bottom line on Exhibit A-3.
Mr. Tolles: That is the monthly and this is the yearly?
The Witness: Yes.
Mr. Tolles: Yes, go ahead.

(Previous portion of answer read as follows: "On Line 11 is shown the improvement in net income from the contemplated changes in"——)

The Witness (continuing): In other exchange rates, expressing it on an annual basis, amounting to $912,900.00. The detail on which that is based is shown in the 22 sheets [fol. 2827] of Exhibit A-4 and in the one sheet of Exhibit A-5.

On A-4, the effect of the contemplated changes in monthly rates for each exchange is shown in the last column and at the bottom of Exhibit A-5 the gross increase in mont-ly revenue from contemplated changes in the rates for semi-public telephone service is shown bringing those all to an annual basis and then deducting from them the items I previously referred to, such as the state excise tax, the license contact payment, the Federal income tax and two or three other smaller items, we come down to the improvement in net income as shown on Line 11 of Sheet 2 of Exhibit A-2, $912,900.00.

Adding the amounts shown on Lines 8 to 11 inclusive, to the net income for the year 1925, gives the total net income on an annual basis with all of the rates now in effect, fully reflected, and also taking into account the improvement in net income from all other contemplated changes, and making that net income for the year, $8,056,298.00.

On Line 13 is shown the rate of return for that net income on the fair value of the property as of December 31, 1925, the rate of return being 5.32 per cent.

Q. What in your judgment is the minimum rate of return upon the fair value of the property of your company which it must have in order to attract necessary capital to the enterprise?

A. The minimum rate of return which the company ought to have on a fair value of the property would be considerably in excess of the rate of return that will be produced

by all of the contemplated changes as shown in these [fol. 2828] exhibits.

Chairman Marshall: Mr. Burr, do you claim they have to attract capital to The Ohio Bell Telephone Company under the four one half per cent contract?

Mr. Burr: Why, of course, we do.

Chairman Marshall: That is one of the benefits of the four one half per cent contract that they claim.

Mr. Burr: The American Company is not under any obligation to finance The Ohio Bell Telephone Company indefinitely.

Chairman Marshall: Aren't they doing it under the condition of the four and a half per cent contract?

Mr. Burr: It is financing it at the present time.

Chairman Marshall: Well, I am not asking that; I am asking if they are not bound to under that contract.

The Witness: Not obligated by the contract, no.

Mr. Tolles: It is obligated to give financial assistance.

The Witness: And the American Company is obligated to render assistance, but it is not obligated to finance the Associated Company.

Mr. Burr: And rightly so.

Commissioner Poor: Well, has your company in the past ever earned more than 5.32 per cent on its fair value of the property?

The Witness: On a fair value of the property, no, not to my knowledge.

Commissioner Poor: You have had the benefit of capital [fol. 2829] up to that time?

The Witness: Practically all of our—well, I will say all of our financing up to this time has come from The American Company; the Ohio Bell Telephone Company has sold no securities to the public; all of our financing has been done by the sale of either demand notes to The American Company or capital stock to the American Company.

Chairman Marshall: What kind of securities?

Commissioner Poor: Where is all the preferred?

The Witness: The preferred stock of The Ohio Bell Company that is now out was issued in exchange for stock of The Ohio State Company at the time of the consolidation. Some of that stock was sold to The American Company, but none of it has ever been sold by the company to the public or to bankers or brokers.

Chairman Marshall: That stock is on the market, isn't it—110 now.

The Witness: It has been selling recently around that price.

Chairman Marshall: It must be pretty attractive.

Mr. Tolles: Not much of it.

The Witness: There is practically no floating supply.

Mr. McConnaughey: What was that, Mr. Cooper?

The Witness: I say there is practically no floating supply of that stock.

Mr. McConnaughey: The people that have it do not care to sell it?

[fol. 2830] The Witness: Yes. I mean by that that I don't think it is safe to draw much of a conclusion from the fact that it has been selling around 110.

Mr. McConnaughey: What is it—6 per cent?

The Witness: 7.

Chairman Marshall: I would like to put a question. If I recall correctly—maybe Mr. Burr—I think that Mr. Rhodes testified that that was one of the most important features of the four and a half per cent contract, that they did not have to go out to the public; they could always get financing; that was one of the considerations passing.

The Witness: Well, I don't think—it is one of the most valuable things that The American Company has done for The Ohio Bell and for the telephone industry as a whole. It has financed the associated companies under many conditions at different times where it would have been utterly impossible for the Associated Company to have kept on going in any other way.

Chairman Marshall: Probably not take four and a half per cent of the gross income to do that.

The Witness: Well, I don't think that that is the determining factor in the financial report that The American Company has given to the telephone companies. I think over and beyond that and back of it has been the fundamental policy and object of The American Company to develop the telephone system and telephone service of this country as much as it possibly could and with that object in mind and from that broad policy, it has been willing to [fol. 2831] lend financial support to associated companies when it would be impossible for them to get it elsewhere, looking to the broad future and development of the business.

Commissioner Poor: Well, Mr. Cooper, if you were allowed rates that showed a return that would be sufficient to attract capital outside of the A. T. & T.; and would thereby eliminate as you say one of the most valuable services rendered you by the A. T. & T. would not that also reflect the reasonableness of the four and a half per cent that it wasn't necessary for them to render you that service.

The Witness: No, I don't think so, Mr. Commissioner, because the license contract does not obligate The American Company to lend to us financial support and that financial service is not one of the considerations in the payment of the license contract payment. That assistance has come to us and has been, as I say, very valuable to us. I doubt if The Ohio Bell Company during the past five years would have been able to obtain anywhere, other than from The American Company, the amount of money we have invested in this property, taking into account the rate of earnings we had from our operations, but The American Company has bought our securities, not because it is obligated under the license contract, but for other reasons.

Chairman Marshall: What are they?

The Witness: I beg pardon.

Chairman Marshall: For what reasons?

The Witness: I can only tell you why my notion of them [fol. 2832] is, and that the principal one is the one that I just referred to a few minutes ago that the requirements of our public, the requirements of the American people as a whole demand the development of an adequate and satisfactory telephone system furnishing a sufficient service and without the additions and extensions to the property made possible by this financing our public would have been without a satisfactory service.

Q. What amount in money has the American Company agreed to loan your company for this purpose for the year 1926 if you know?

A. They have agreed to loan us for our use during 1926 $9,861,000.00.

Q. Yes, at what rate of interest?

A. At 6 per cent interest per annum.

Q. Upon what sort of security?

A. Upon our demand notes, unsecured.

Commissioner Maullar: On your estimated income how

much are you going to pay them on the four and a half per cent contract at the same time?

The Witness: I haven't that amount. I can't tell you how much we paid them.

Commissioner Maullar: Just approximately.

The Witness: About a million and a quarter dollars.

Chairman Marshall: That is, you mean that on an estimated gross income for 1926, their four and a half per cent will amount to a million and what did you say?

The Witness: About a million and a quarter, perhaps a million three hundred thousand, somewhere around that total.

[fol. 2833] Mr. McConnaughey: Well, you have paid them 6 per cent. on all the money that they have ever advanced you, in addition to the four and a half per cent?

The Witness: The present Ohio Bell Company has, yes.

Mr. McConnaughey: Yes.

The Witness: Since our company was organized in 1921.

Mr. Postle: Has the Ohio Bell attempted to attract other capital than that agreed to be furnished by The American Company?

The Witness: No, we have not; we didn't consider that we were in a position to do it and we were confident that capital would cost us considerably more money.

Q. What other particular financial assistance has The American Company agreed to afford your company this year?

A. The American Company has recently tentatively agreed to purchase five million dollars par value of the common stock of The Ohio Bell Company to put The Ohio Bell Company in funds to retire some 7 per cent bonds that can be called and retired on or after July 1, 1926.

Mr. Tolles: What rate of interest do those bonds bear?

The Witness: 7 per cent bonds.

Mr. Tolles: And nearly five millions of them?

The Witness: Yes, as I recall $4,831,000.00, I think, to be exact.

Mr. Tolles: And the price at which they get the stock.

[fol. 2834] The Witness: At par.

Chairman Marshall: Mr. Cooper, your company's securities are never offered to the public are they, particularly the common stock?

The Witness: No, our common stock is always offered to the existing stockholders.

Chairman Marshall: Well, that is the A. T. & T. isn't it?

The Witness: Yes.

Chairman Marshall: You never to your knowledge have ever offered to the public the common stock or any of it at any price?

The Witness: I don't think we could as a corporation. It is a legal question, but I am of the opinion that common stock must first be offered to the existing stockholder.

Mr. McConnaughey: That is right.

Commissioner Poor: However, it could be offered to the public if the A. T. & T. waived its right to subscribe?

The Witness: Of course The American Company as a stockholder would have the right to sell its holdings of Ohio Bell common stock if it wanted to. Any stockholder I imagine would have a right to dispose of his holdings, not only of Ohio Bell stock, but of any other stock.

Mr. McConnaughey: The A. T. & T. Company has taken over blocks of your stock from time to time, of The Ohio bell?

[fol. 2835] The Witness: Yes, during 1925, the American Company purchased 16½ million of our common stock; eight million and a half of that was sold to reimburse to that extent our treasury for net additions to property. The other fifteen million was sold at par to retire a like amount of notes. That is the funds obtained by the sale of that fifteen million of the common stock was used to retire notes to the same amount.

Mr. McConnaughey: And before that they have taken blocks of stock from time to time, haven't they?

The Witness: Yes.

Mr. McConnaughey: How much did they take in 1924?

The Witness: I don't recall that the company sold any common stock during 1924, but I am not certain of that now.

Mr. McConnaughey: Of course they always buy it at par, I suppose?

The Witness: Yes, yes, at par. I think I can answer your question. At the time the company was organized there was twenty-five millions of common stock outstanding; subsequently we sold three and a half million, at the time The Ohio Bell Company purchased the Ohio properties of the C. & P. Company. That brought the amount of common

stock up to 28½ million; and during 1925, the remaining sixteen one half million was sold bringing the total up to forty-five million.

Mr. Tolles: So that there was none sold in 1924?

The Witness: Beg pardon.

[fol. 2836] Mr. Tolles: There was none sold in 1924?

The Witness: No, there was none sold during 1924.

Mr. Postle: I understand, Mr. Cooper, that the American Company has agreed to purchase five million of the bonds of The Ohio Bell.

The Witness: No, five million par value of the common stock.

Mr. Postle: Of the common stock. Now, let me ask you about the demand notes. Is there any agreement between your company and The American Company to pay those off at specified times?

The Witness: No.

Mr. Postle: Does the American Company have the policy of allowing those to run any length of time before it calls for its money?

The Witness: I cannot answer as to the policy of The American Company except what I know about it from what I have seen myself. There has never been any indication of any desire on their part to set a definite date by which they would require payment of those obligations.

Mr. Postle: Those are six per cent notes, aren't they?

The Witness: Six per cent demand notes, unsecured.

Mr. McConnaughey: Well, this five million dollar operation that you speak of will leave $2,715,000.00 still outstanding?

The Witness: No, you are looking at the wrong item, Mr. McConnaughey; the bonds to which I refer are included in [fol. 2837] the funded debt of $10,312,000.00.

Mr. McConnaughey: I see. Well, you still have seven million plus of demand notes outstanding?

The Witness: Yes.

Mr. McConnaughey: In the hands of The Bell Company?

The Witness: We have more than that, now.

Q. In your discussion, Mr. Cooper, to Mr. McConnaughey, you are referring to the annual report of the company for the year 1925?

A. Yes.

Mr. Postle: What dividend is your common paying?

The Witness: At the rate of six per cent per annum now.

Mr. McConnaughey: In what year did you pay six per cent?

The Witness: 1925 was the first year that we ever paid six per cent on that stock.

Mr. McConnaughey: That is at the end of 1925, did you declare that dividend or at the beginning?

The Witness: No, it was declared and paid during the year from time to time.

Mr. McConnaughey: Quarterly?

The Witness: Quarterly, yes.

Mr. McConnaughey: What are the prospects of this year or plans for this year?

The Witness: We hope to be able to pay a dividend on the common stock at the same rate during 1926.

Mr. Postle: Do you build up a reserve in addition to that?

[fol. 2838] The Witness: Beg pardon?

Mr. Postle: Do you build up a reserve in addition to that?

The Witness: For the year 1925 we carried an amount of $469,000.00 to corporate surplus which is the amount over and above dividends paid and other appropriations from net income, if that is what you mean.

Mr. Postle: Fine.

Q. Mr. Cooper, can you tell the commission how much money your company borrowed of The American Company in the year 1925 and the approximate dates when it was borrowed?

A. Our company borrowed from The American Telephone and Telegraph Company during the year 1925 on demand notes, seven million dollars.

On January 2nd, $500,000.00. On June 29th, $150,000.00. June 30th, $450,000.00. July 20th, $400,000.00. August 31st, $200,000.00. September 4, $300,000.00. September 21, $200,000.00. September 21, another note for $100,000.00. September 21, the third, $500,000.00. September 30, $700,000.00. October 1st, $500,000.00. December 1st, $300,000.00. December 7th, $200,000.00. December 31, $2,200,000.00. A [fol. 2839] total of $7,000,000.00 on demand notes during 1925.

Q. Are you able to tell the Commission what was the savings of your company by reason of its ability to borrow that

much money at six per cent on immediate notice on the unsecured notes of your company?

A. I have made a study of it and have here a memorandum that shows my judgment of the interest savings to The Ohio Bell Company coming from its ability to raise this money when and as needed by the sale of demand notes to The American Company.

Q. As compared with what other method?

A. As compared with the costs that would have been incurred in raising that amount of new capital in some other way. In this study I assume that if the company were required to go out and borrow money in the open market or to obtain it by the sale of securities through bankers and brokers that it would have been necessary to raise prior to October 1st, 1924, the total amount of money that would be required to finance the construction program during the year 1925 and I say that it would have been necessary to raise the money by that time because it is always necessary for the company to schedule ahead by a considerable period of time its construction operations. We must make arrangements to buy materials; we must schedule with switchboard orders and we must have our construction forces organized to handle the contemplated construction work. Now, if the company had borrowed this seven million dollars in the open market, October 1, 1924, and if it had been able to obtain that money at the six per cent cost it would have paid [fol. 2840] from October 1, 1924 to December 31, 1925, at six per cent per annum, a total interest payment of $315,962.50, plus 3 per cent assumed as the income which might have been obtained from those funds by investment or loaning of them until the date required. This $315,962.50 is the net cost that the company would have incurred for interest on those borrowings at the rate of six per cent per annum.

Q. Do you know that the money borrowed in bulk could have been put out at a rate of interest as high as three per cent temporarily?

A. That is the maximum rate that I have ever known of any company being able to obtain by the temporary loan or investment of funds of that kind. Now, the actual amount of interest paid by The Ohio Bell Company to The American Company on the loans of this Seven Million Dollars obtained through the sale of notes according to the schedule I have just read was $104,786.50. The difference between

that and the amount of interest I have previously stated, I have taken as the interest saving to The Ohio Bell Company related solely to this seven million dollars for the year, 1925, and amounts to $211,176.00.

Q. The amounts to be borrowed by your company from The American Company for 1926 will, if I understand you correctly, be taken out from time to time?

A. Yes, that money will be obtained when we need it and as we need it.

Mr. Postle: Does The American Company charge a premium for the money you borrow from it?

The Witness: No, sir.

[fol. 2841] Mr. Postle: Would any other financial concern ask a premium of The Ohio Bell Company if they loaned it?

The Witness: I think they would.

Mr. Postle: Are you sure of it?

The Witness: I am confident of it.

Mr. Tolles: Brokers have to make a living some way.

Mr. Postle: So does the American Company.

Q. Do you know any place where your company could borrow such an amount as The American Company has agreed to loan it from time to time on demand notes without security?

A. No, I do not.

Mr. McConnaughey: You never looked for such a place, did you?

The Witness: No, I have not because I don't think that such a place could be found.

Mr. McConnaughey: Well, you didn't have any occasion to look for it, did you?

The Witness: No, really no occasion. I have had bankers tell us that from a bank standpoint we were not entitled to any loans.

Chairman Marshall: What was that statement?

The Witness: I have had bankers tell us that we were not entitled to any loans. They look at our balance sheet and they find that our quick ability *are* greater than our quick assets. That is one thing that a banker always looks at and when he sees that condition in a balance sheet statement, he is not inclined to loan money on it. Then of course banks at least as I understand it as a matter of policy always like [fol. 2842] to have their loans in liquid securities or liquid assets and they know that a loan to a utility such as The

Ohio Bell Company making as it is extensive additions to its property from year to year, that the money loaned will be invested in telephone plant and equipment where it cannot be gotten at readily.

Mr. Burr: Mr. Anthony may be sworn and take the stand.

And thereupon the witness was temporarily excused.

[fol. 2843] And also WILLIAM T. ANTHONY, called on behalf of The Ohio Bell Telephone Company, being first duly sworn, testified as follows:

Examined by Mr. Burr:

Q. You may state your name?

A. William T. Anthony.

Q. Are you the same Mr. William T. Anthony who testified in the so-called toll rate case, Number 1728 on the dockets of the Commission in 1924?

A. I am.

Q. What is your present occupation with The Ohio Bell Telephone Company?

A. Building Equipment Engineer.

Mr. Burr: With the qualification of Mr. Anthony already in the record in the toll case, will counsel and the Commission desire that any further qualification——

Mr. McConnaughey: Yes.

Mr. Burr: I should have asked the same question with reference to Mr. Kositzky's testimony yesterday. Are counsel and the commission satisfied with his qualifications?

Mr. McConnaughey: I am.

Mr. Burr: In the toll rate case Number 1728, you testified as to the value of the services rendered under license contract between The Ohio Bell Company and the American Company from the traffic standpoint. Your direct testimony is contained in Pages 986 to 1033 of the record in that case [fol. 2844] and covered a general summary of the services furnished the traffic department of your company by The American Company; also you testified as to certain of the savings resulting to your company from this service.

With that preamble, we offer in evidence all of Mr. Anthony's testimony in chief in the toll rate case and all of the exhibits offered in connection with his testimony.

Q. In that case, Mr. Anthony, you testified in general to the services furnished your company by The American Company and following that with an outline of certain typical instances of services furnished. Can you tell the Commission some of the services rendered by The American Company to the Traffic Department of your company since your testimony in the toll rate case?

A. Yes, I can. Since that time, the A. T. & T. Company have rendered a great deal of assistance to us from the traffic standpoint. One of the very important recent developments furnished by The American Company is a new method of making connections between two central offices in the same exchange. I have in mind a method referred to by Mr. Allen in his testimony last month known as the straightforward trunking method. We are planning on introducing that method in three of our largest exchanges and we feel that later on, we will spread it to other exchanges. We have already prepared engineering studies for Cleveland, Toledo, and Columbus. In the case of Cleveland, we expect the method to be introduced sometime this summer, probably in July. It might be of interest to explain [fol. 2845] the method briefly to show its advantages over the method it will replace. At the present time in making connections between two central offices in the same exchange, the method used is something like this, the A operator receives the order from the subscriber, repeats the number for verification and then goes over what is known as a call circuit to the distant office; to get to the distant office, she depresses one of a larger number of small keys appearing on the key shelf of her board. The same circuit that is used by this operator for reaching the distant office is also used by a great number of other operators. That means that there may be congestion on that circuit. It is necessary for the A operator to await her turn in order to pass the number to the B operator. In the case of our new operators, we find that it is very difficult to train them to always wait; that means that occasionally, they will break in on an order that is being passed by another A operator, which results in some confusion. The B operator, that is the operator at the distant office, upon receiving the called number, assigns a trunk to the A operator. Now, the B operating end is rather tricky for the reason that while the B operator must repeat the call—must repeat the trunk assignment she must in the meantime bear in mind the called

number and connect that and it is very easy for her to confuse those two numbers.

The new method, straightforward method is a much more simple one in that the A operator has what might be called [fol. 2846] a private line to the distant office. Upon receiving an order from the subscriber, she selects an idle trunk appearing in front of her position. This automatically connects the trunk to the headset of the B operator and the automatic connection of this trunk sends back tone to the A operator which is an indication to her that she can pass the number. She passes the called number. The B operators completes the connection of the multiple jack and the call is completed.

With the new method, we feel certain will result in fewer errors on trunked calls, which of course will be improvement of service. We also know from our studies that we will realize considerable economy. I have a note later on to cover the savings we estimate by that method.

Q. What are some of the respects in which The American Company devised the method for installation of the straightforward trucking?

A. They have applied their new development to existing equipment and it is a very simple operating method and also fairly simple from an equipment standpoint. As a matter of fact, we will realize in addition to economies in operating expense considerable economy from an investment standpoint.

Q. What is another specific instance of service rendered to your company by The American Company in the two year period just passed?

A. Another important development of the A. T. & T. and which has been furnished The Ohio Bell is a new method of toll operating. We call it the combined line and recording method.

[fol. 2847] Chairman Marshall: What?

The Witness: The combined line and recording method. It derives its name from the fact that the recording and line work is handled by the same operator. Prior to the introduction of this method we had two operators in on every toll call, that is, long haul toll call. The subscriber upon giving an order to the A operator for long distance was transferred to a recording board. The operator at

that board recorded the details of the call and then dismissed the subscriber.

The ticket was then routed either by a mechanical carrier of some kind or by a messenger, to a special line position. Our line board was divided into a number of parts, traffic being segregated according to the terminating business. For instance, in Columbus, we have a number of positions at which nothing but Cleveland traffic is handled, other positions at which only Dayton traffic is handled. This method in addition to requiring the dismissal of the subscriber also involves a distribution period, a period required to get the ticket from the recording board to the line board.

Now, the new method, the combined line and recording method is quite an improvement from the standpoint of speed. Where this method is in use, we have eliminated our recording board and have *and have* terminated our record trunk at line positions, which means that the first toll operator to receive the call disposes of it. The subscriber remains at this telephone while the toll operator is com- [fol. 2848] pleting the call. That will of course result in a much lower speed of service——

Q. You mean a faster speed?

A. Yes. By speed of service, I mean the time, the interval between the placing of the call and its completion or the giving of a satisfactory report to the subscriber, such as, "Called party, cannot be located."——

Q. Will be reduced?

A. That will be materially reduced.

Q. Proceed?

A. This method is now in effect at Toledo, Ohio. We made it effective last November on the basis of preliminary information received from the American Company. The American Company also sent one of their operating men into our territory to assist us in placing the new method in effect.

Q. To go back to the combined line and recording for a moment, are any savings involved in the use of that method? I am not asking you to evaluate them, but are any savings involved?

A. We don't know at this time just how much will be saved in the way of money. We do know that the service

will be very much bettered, but we have every reason to believe from our experience at Toledo that we do realize considerable economies. We at Toledo have already made a material reduction in our messenger force and we expect other economies.

Q. By messengers you mean——

A. I have in mind young ladies carrying tickets from the recording board to the line board.

[fol. 2849] Q. Give an instance of any other kind of special service which your company has received from The American Company in the past two years, other than in a traffic service?

A. Another service received from The American Company in the past two years was a new intercepting desk, known as the Number 17 C centralized intercepting desk. Without the use of a board of this type, it is necessary in a multi office exchange to have special intercepting operators in each central office.

For instance, in Cleveland, we would have 16 or 17 groups of such operators. I might define here the meaning of the intercepting traffic. When a subscriber moves from one office to another it is of course necessary to change his number. Also in order that we may at all times give the public accurate information on disconnected numbers, it is necessary for us to have a complete record of the status of every number in our office. Such a record is kept at our intercepting desk. When a call is received for a number that has been disconnected or changed, the A operator has an indication of this fact by a special marking of her switchboard. She then transfers the call to one of these intercepting operators who advises the calling subscriber as to the status of the line. Now, we feel that there is considerable advantage in having work of this sort, which is rather special, centralized at as few points in a large exchange as it is practicable. In the case of Cleveland, we have already engineered two centralized boards. One will be located in the new downtown office and the other [fol. 2850] in one of our east side offices. This board is in accordance with the A. T. & T. Development referred to previously and we expect to realize considerable economy from its use.

I have under another heading some figures on that, Mr. Burr.

Q. Briefly then, it centralizes your so-called interception, doesn't it?

A. Intercepting traffic.

Q. Yes, intercepting traffic?

A. Yes, it means this: Instead of having as I said, 16 or 17 groups of operators in Cleveland, we will have two groups. We will have fewer positions and fewer operators on account of having a large team available at these two points.

Q. Give the Commission another example of special service accorded your company by The American Company during the past two years?

A. During the past two years, we have received a great deal of assistance from the American Company in connection with the handling of our toll business. Toll problem in Ohio—and I think it is true throughout the system—is getting bigger every day and it has been our aim to make the service as rapid as possible. The public demands such service. The handling of coal traffic is of course more complicated than the handling of local traffic and we have found it necessary to call on the A. T. & T. Company for assistance in connection with some of our problems. They have also given us a great many new developments on toll, one of the most important in my opinion has been the train-[fol. 2851] ing of our toll men. We have in Ohio a number of men who have specialized in the handling of toll business. The American Company sometime ago organized training courses for toll men and for men in the local department who would later be assigned to toll work. During the past two years, The American Company has held several classes of this kind. I have in mind two that were held in Philadelphia in 1925 at which we had representatives, three of our division traffic superintendents took this course and at the present time there are three classes under way. One is at Philadelphia, one is a Chicago and one is at Cleveland. The Ohio Bell Company has three of its men attending these classes. The course is supervised by various members of the General Staff of The American Company. I attended several sessions of one of these classes last year, and it is my recollection that during the three weeks' period, during which the course is in operation, they have as many as six different toll specialists working with the class of students.

Q. Whom do you mean by "they"?

A. The American Company. This course is quite complete. In order that the men in charge of the toll offices might have the operators' viewpoint, the men in the class are given actual switchboard work, under the supervision of the A. T. & T. experts, they actually handle commercial calls. However, the most important part of the course is the training given these men in connection with toll office management problems, such as the proper method of adjusting the operating force for various periods of the year. [fol. 2852] We have seasonable fluctuations in toll traffic; also the training in connection with the most economical method of adjusting the force for various hours of the day. They are also given training in connection with the analysis of various traffic records in order that they may be able to, in case the results are not as satisfactory as they should be, to analyze the various parts of the work and find out wherein the work is not being performed as efficiently as it should. It is my understanding that these toll classes will continue and I know that Mr. Carroll has in mind that practically every traffic man in the territory of The Ohio Bell Company will eventually have the advantage of the training given by the A. T. & T.

Q. Who is Mr. Carroll?

A. Mr. Carroll is general superintendent of traffic of The Ohio Bell Company.

Q. On February 25 of this year, Mr. Allen of The American Company placed in evidence the following circulars prepared by The American Company and furnished to your company:

Traffic Circular Number 212, on the subject of toll line engineering practice.

Traffic Circular Number 214, on the subject of payroll routine.

General Engineering Circular Number 1575, on traffic engineering, of Inter-office trunks.

General Engineering Circular Number 1724, on straightforward trunking.

[fol. 2853] Tell the Commission whether or not those circulars have been received by your company and whether they are now in use by it?

A. Yes, they have been received and are now in use by the Traffic Department.

Q. Has your company received other traffic circulars from The American Company since your testimony of March, 1925?

A. Yes, we have.

Q. Have you available at this time any typical traffic circulars furnished your company by The American Company during the past two years other than those offered in connection with Mr. Allen's evidence?

A. Yes, I have a new typical traffic circular.

Mr. Burr: The first one which is Traffic Circular Number 225, on the subject of selection and training of supervisors-local, may be marked for identification Anthony Exhibit A-1; the circular marked P.C. 229 of the subject of traffic information in connection with fundamental plans may be marked for identification Anthony Exhibit A-2 and traffic circular Number 208 on dining service operation, Anthony Exhibit A-3: They are offered in evidence.

And thereupon the circulars so last above offered are introduced and admitted in evidence on behalf of The Ohio Bell Telephone Company and are herewith submitted marked Anthony Exhibits A-1, A-2 and A-3 and made a part hereof.

Q. Will you pick up those circulars and briefly tell the [fol. 2854] Commission how they are of use to your company?

A. The first, taking traffic circular Number 225, which covers selection and training of supervisors, it is quite important from a traffic and service standpoint that we have well-trained supervisors in our offices. We have at all times due to the growth of the business and the turnover in the force, a number of new operators. It is important that these operators have well-trained supervisors.

Traffic circular 225 covers the selection of supervisors from the operating forces, pointing out the qualifications for a good supervisor. It covers preliminary tests before the employee is appointed to the position of supervisors and covers the technique of operating and a great many of the management problems that it is not necessary for an operator to be familiar with, but which is quite necessary for a supervisor. This bulletin has been used by our company with very fine results.

Traffic Circular Number 229, the subject of which is traffic

information in connection with fundamental plans has also been of value to us. As Mr. Kositzky pointed out in his testimony, it is necessary for us to make fundamental plan studies for future periods. The traffic department plays an important part in the preparation of these plans, in that it is the traffic engineer's responsibility to estimate future calling rates; in order to determine the volume of traffic he must estimate 20 years in advance, the volume of traffic trunked between all central offices in a given exchange and [fol. 2855] must determine the number of trunks required between each pair of offices. All of these things go together with a number of other matters having bearing on traffic estimates for fundamental plans is covered in this traffic circular.

Traffic Circular Number 208, the subject of which is dining service operations, we consider quite important.

Q. How large does that subject of dining room operation loom in the business from the standpoint of money involved?

A. It is quite large, Mr. Burr. During the year 1925, the dining room receipts for The Ohio Bell Company amounted to slightly over $367,000.00.

Q. Proceed?

A. In view of the large amount of money involved in the operation of our dining rooms, it is necessary that we have a well-organized system of operation. Now, we, of course, cannot afford to have a trained chef in each one of our dining rooms. We have just an average woman acting as matron. The bulletin furnished by the A. T. & T. is of a great deal of assistance to the dining room people. It covers the—I might state this point, that this bulletin was prepared by a member of the General Staff of the A. T. & T. Company who prior to his connection with the telephone business was at the head of a large eastern hotel, an experienced steward. This bulletin covers the proper kind of an organization for dining room operation; it covers the purchasing of food, menu planning and there is an attachment to this bulletin which covers some 200 recipe cards.

It is our aim to serve the best food to our employees at [fol. 2856] a minimum, and we aim to break even so far as the cost of food and labor, laundry and so forth is concerned. During the year 1925, we came within 1.2 per cent of breaking even and there was no question in my mind, but what this bulletin had considerable bearing on that performance.

Q. Tell, the commission some of the other services furnished by the American Company to your company since 1924?

A. The American Company is constantly giving us assistance in connection with specific problems in Ohio, as well as furnishing information in connection with new developments. From January 1st, 1924 to January 1st, 1926, the traffic department of The Ohio Bell Company received from the American Company 249 letters bearing on traffic matters.

Q. Were those definite problems?

A. Yes, practically all of them had to do with assistance in connection with certain specific problems we had in Ohio.

Q. Yes.

A. During the same period, there were 171 conferences between members of the General Staff of The American Company and members of The Ohio Bell organization held either in New York or in Ohio. The matters discussed at these conferences also had to do with problems which were being studied in this territory.

Mr. Postle: How many of those were referable to this one particular thing that you are now discussing—that is the service, the dining room service or whatever it is.

The Witness: Well, now, I can't answer that. I would [fol. 2857] say that—well, a great many of different subjects were covered by these 171 conferences. I have in mind only one case where we had a special conference in connection with dining room operation. There may have been others that I am not familiar with.

During the same period, January 1st, 1924 to January 1st, 1926, the A. T. & T. Company made 74 calls to Ohio in connection with some particular specific problems. Some of the subjects covered in letters, conferences and telephone calls were for instance, Mr. Van Hagan, who is a member of the traffic engineers office in New York, has made several trips to Cleveland to assist us in connection with the introduction of machine switching plan in Cleveland in the near future. I have in mind one conference that I happened to sit in myself wherein he outlined to the traffic people what were considered the best practices in connection with the loading of machine switching offices. In connection with the introduction of machine switching in Cleveland, we want to urge issuing a directory at the time we change, for the reason that

there is quite an educational program involved where a new directory is issued and which must be used at a certain hour on a certain date. Now, to avoid issuing a new directory, in addition to cutting several thousand lines to machine switching, it is necessary that we have our numbers well assigned in advance. The American Company has had considerable experience in connection with problems at other points in the country where a similar condition existed and [fol. 2858] Mr. Van Hagan furnished our traffic people with what we considered a very satisfactory method of advance assignments, which will permit a well-balanced load to be introduced with our new machine switching equipment.

Another specific matter with the A. T. & T. Company have assisted us in working out is, the proposed centralized information desk which we plan on in connection with our new Cleveland office. The American Company has recently designed a new type of information desk which is more economical in that it decreases the amount of equipment required. We received informally information in regard to this desk and we have already engineered and ordered it for Cleveland.

A very valuable service rendered recently by the American Company had to do with the engineering of our new Toledo and Cleveland offices for the combined line and recording method. Our experience in connection with Cleveland is particularly interesting for the reason that we had already engineered the new office on the basis of the old method. The Western Electric Company were ready—they had also completed their engineering and were ready to start manufacturing. The results of the method as experienced at Toledo were so good that we felt we couldn't afford not to have it for our new Cleveland office. We got in touch with The American Company and asked them if they would assist us in do-ing the necessary-engineering of our Cleveland job in order to make that new method available. They sent to Cleveland one traffic man and two equip- [fol. 2859] ment men—I am not sure that there was not a fourth man,— anyway these three men came on Cleveland,— I think it was two days before Christmas of last year, reviewed the order with us and agreed that they would rush the necessary development work in connection with the new board in order that we could have it—in order to give the Western Electric Company the information at a date early enough to permit them to revise their engineering and yet

not delay the job. One of the members of the American Company went to the Chicago plant of the Western Electric Company and assisted our people in revising the engineering.

The American Company is continually assisting us in connection with our operating problems, both local and toll. Mr. LaChance, member of the General Staff of the American Company has made a number of visits to Ohio recently in connection with the training of operators in the use of dial and the call indicator equipment.

Another matter I have in mind is assistance received from The American Company in connection with the development of equipment and the development of a method for central office instruction work at our machine switching special A Boards. We have had for several years central office instructions in our regular manual offices. I think the matter of central office instruction is covered by Mr. Allen's testimony in 1924, and also in mine, but since that time the A. T. & T. have developed equipment and methods for use in connection with machine switching A boards. They have had a man in this territory in that connection and have [fol. 2860] assisted us in the training of an observer and in addition the various practices involved.

Q. Those are not all the services are they?

A. No, no, we have a number of others.

Q. Well, I won't ask you to describe anymore just now at least. In your previous testimony, that is to say your testimony in the toll rate case, you submitted a statement of savings in expenses due to a certain service furnished and developments made available to you by the American Company. The statement was based upon the results of the year 1923. Have you prepared a similar statement showing the results for the year 1925?

A. Yes, sir, I have. The first one I have, Mr. Burr, is single ticket toll operating method.

Mr. Burr: The statement referred to by the witness may be marked Anthony Exhibit A-4 and is offered in evidence.

And thereupon the statement so last above offered is introduced and admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted marked Anthony Exhibit A-4 and made a part hereof.

Q. Calling your attention to Item Number 1 on Exhibit A, in that, will you tell the Commission what it represents

and how you arrived at the amounts shown for that item, both in the savings in first cost and in annual charges?

A. The savings as shown by Item Number 1 represent the economies resulting from the use of the single ticket [fol. 2861] toll operating method as compared with the two ticket toll operating methods.

Q. For what year?

A. For the year, 1925. Those savings were developed from an analysis of the actual records of the company for the year 1925. The single ticket method which I explained in my testimony in 1924, results in considerable economy in operating labor. During the year, 1925, the average work time required for a single ticket call was 35.6 per cent less than would have been required for a two ticket call. In making this study I have developed from the records of the company the actual units per call for the new method and have prepared those units with the units per call under the former method. That results in a reduction of 14.94 units per call.

I might explain a traffic unit at this point. As a matter of convenience we have developed a set of coefficients the basis of which is a traffic unit. A traffic unit represents the work time required to complete a call originating at a Number 1 subscribers board and which is completed at that same board, the call being of the flat rate type. Work units for all other types of calls are based upon that premise. As I said before, the new method resulting in a reduction of 14.94 units per call and knowing the actual cost per unit for the year 1925, we are able to arrive at the reduction per call which in the case of this method is 6.62 cents per call for operating; 1.01 cents for reduction in equipment. That is a total reduction per call for equipment and equipment of 7.63 cents.

[fol. 2862] In addition to realizing economies in operating and switchboard equipment, we also realized economies in the toll plant—that is in the number of circuits required. For the year 1925, the reduction per call due to the single ticket method for circuits was .85 cents. The total reduction per call applied to the number of calls actually handled in 1925 which was 8,284,250 results in a saving of $702,504.00 in annual charges, including operating, and charges on equipment and circuits. The investment corresponding to the annual charges on equipment and investment is $695,000.00 as shown in Item Number 1.

Q. You may continue with your evaluation?

A. Item Number 2 covers the savings resulting from the use of two-number toll operating method as compared with the simplest kind of a single ticket call. The method of arriving at the savings in annual charges and in first cost is about the same as explained for Item 1, the actual records of the company were used.

Two-number method has not been explained in the record as I recall it. We didn't cover this particular item in our 1924 testimony. It is an improvement over the single ticket method in that it results in a faster service at lower costs. The single ticket method provides that the recorder dismisses the calling subscriber and when she is ready to work on his call she calls him back. Now, the two-number method provides that the subscriber remains at his telephone during the period the operator is completing his call.

[fol. 2863] Item Number 3 covers the savings resulting from the use of the A-B operating method as compared with the two-number toll operating method. The A-B method is an improvement over the two number for the reason that the operator first answering the subscriber handles the call. That is the A operator receives the order and completes the call herself. It is not referred to another operator unless it involves tandem operation, in which case it is switched at that point, but that is true only in the largest cities. The savings in first cost and the savings in annual charges were developed in about the same way as explained for the single ticket method. The Number of A-B toll calls handled during the year 1925 was 2,174,575, calls; we realized a saving per call for operating and switchboard of 2.11 cents. I might state at this point that the number of calls involved in Item Number 2, that is, the 2 number method was for the year 1925 2,067,722 calls and that improvement made a saving of 2.08 cents per call with this method as compared with the simplest kind of a single ticket call.

Chairman Marshall: Let us take five minutes' recess.

(At this point a short recess is taken.)

The Witness: The next item, Number 4, which covers the savings resulting from the use of the machine ringing trunk circuits as compared with manual ringing trunk circuits, shows a saving in first cost of $201,000.00, and a

saving in annual charges of $306,196.00. That method, [fol. 2864] machine trunk ringing method is explained in 1924 testimony and the savings were developed in a manner similar to that outlined for the first three items. The number of calls involved for the year was 370,249,100.

Item Number 5 which covers the savings due to the use of the pre-pay coin box method as compared with the post pay coin box method for the year 1925, of $223,553.00. That is based upon 42,179,800 calls. The method of arriving at a savings for this item was similar to the method outlined for the other item.

The total savings for the five items is $932,300.00 in first cost and $1,321,146.00 in annual charges.

Q. Are those all of the traffic savings experienced during the past two years due to the services of the American Company performed for your companies?

A. No, they are not, Mr. Burr; they represent five I have selected.

Q. Are the savings continued year by year?

A. Yes, sir.

Q. In the same ratio always?

A. Well, I think the service is greater in here due to growth of the business and the greater complications we have with the large volume of business.

Mr. McConnaughey: Am I to understand that these are savings effected in the last two years?

The Witness: No, no.

Mr. McConnaughey: That is what you said a moment ago?

The Witness: Well, that—if I did I was in error, Mr. [fol. 2865] McConnaughey. These figures represent the savings realized during the year 1925.

Mr. McConnaughey: You introduced a similar exhibit to this two years ago didn't you?

The Witness: I don't think I introduced the exhibit, but I covered some of these items.

Mr. McConnaughey: You didn't reduce them to figures of savings?

The Witness: Yes, Yes, I showed in my testimony the annual charge savings and as I recall it, Mr. Kositzky included in his summary the first cost savings.

Mr. McConnaughey: I see.

The Witness: Those figures were for the year 1923.

Mr. McConnaughey: Well, now, you have brought those same figures down to conditions in 1925?

The Witness: That is right, and I have added two new items, two new toll operating practices.

Mr. McConnaughey: Which are the two new ones?

The Witness: Items 2 and 3.

Mr. McConnaughey: Oh, I see——

The Witness: Yes, items 2 and 3.

Mr. Postle: I understand then, do I, Mr. Anthony, that you could not have effected these savings in annual charges amounting to $1,321,146.00 unless it had been because of your connection with the American Company?

The Witness: That is right.

Q. With respect to the centralized intercepting which has been inaugurated in Cleveland, is it the plan of the com- [fol. 2866] pany to extend that, that improvement, to the other parts of the system?

A. Yes, sir.

Q. And with respect to the straightforward trunking, is that also to be extended?

A. Yes, sir.

Q. Are you familiar with the chart submitted by Mr. Allen on February 25 of this year in this case showing the trend during the period from 1921 to 1925 of the percentage of toll calls completed?

A. Yes, sir.

Q. What was the per cent completed in 1921 and in 1925 if you remember?

A. In 1925 the Ohio Bell Company completed 78.9 per cent of the offered toll calls. In 1925, the Ohio Bell Company completed 89.7 per cent of the offered toll calls.

Q. Showing an improvement of almost 11 per cent?

A. 10.8

Q. Yes?

A. Yes.

Q. How did you arrive at those figures?

A. Those figures are based upon actual records of the company.

Q. To what do you attribute the improvement in the toll completion for that period?

A. To better toll methods and to better management.

Q. Generally speaking, to what extent has the American

Company assisted your company in the improvement of toll methods and management?

A. Well, as I stated previously, the American Company has been of great assistance to us in connection with the development of new and improved toll equipment, new and improved toll operating methods and also has been of great assistance to us in the handling of some of our specific [fol. 2867] problems.

Q. How much more toll revenue did the Ohio Bell Company actually have in 1925, than would have been obtained if the percentage of toll calls had been the same as in 1921?

A. Approximately $502,000.00 more.

Q. Upon what traffic is that based?

A. That is based upon Ohio toll business handled at Ohio Bell offices and does not include the business of any other company.

Mr. Burr: Will you stand aside?

At one of the previous hearings, Mr. Commissioner Poor asked for a statement showing the book cost of land carried in Account 111, miscellaneous investments, and in Account 211, land. Mr. Uprichard prepared an exhibit responsive to that request, but it appeared later that what the Commissioner wanted was what might be termed the original book cost to the Ohio Bell Company at the time of the acquisition of the property and not with any subsequent additions to it.

A new exhibit has been prepared and I believe that it will meet with Your Honor's requirements. It is here and we will submit it. Shall it be marked for identification Commission Exhibit A?

Chairman Marshall: Yes.

Mr. Burr: I don't remember how the last one was marked. We will mark this one Commission Exhibit A.

Commissioner Poor: The other was marked Commission Exhibit 1 and 1-A.

Mr. Burr: Were there two of them?

[fol. 2868] Commissioner Poor: My notes show——

Mr. McConnaughey: One for the land and one for the buildings.

Commissioner Poor: My notes show original cost, 1 and 1-A; Uprichards Exhibit 2 cost of construction work in progress.

Mr. Burr: Well, to avoid any question about it, I suggest it be marked Commission Exhibit A or if the Commission

desires, it can be marked Uprichards Substitute Exhibit A.

Commissioner Poor: It does not make any difference.

Mr. Burr: Well, I have it marked Exhibit A; suppose we let it stand that way.

And thereupon the paper writing so last above referred to is for the purposes of identification marked Commission Exhibit A-1-A.

Mr. Burr: Mr. Anthony reminds me that at one point in his testimony he agreed in response to a question I think asked either by Mr. McConnaughey or Mr. Postle to give—or perhaps I asked it—to give some figures on the item of straightforward trunking. If you have them there, Mr. Anthony, you may do it just from where you stand.

The Witness: Yes, we have made an engineering cost study and have actually ordered equipment for straightforward operation in Cleveland; we have also made a cost [fol. 2869] study and are getting ready to order equipment of the straightforward type for Columbus and Toledo. For the year 1926, we expect that the use of this method will result in a saving of $395,000.00 as compared with the present call circuit method.

We have also made an engineering study and have placed an order for centralized intercepting equipment of the Number 17 type. We expect that for the year 1930 to realize a saving of $45,000.00 for this equipment in Cleveland only. It is also our intention to install this equipment at other multi-office cities.

Q. With respect to the——

Commissioner Poor: I just want to ask Mr. Anthony one question before we leave. I believe you testified that the A. T. & T. had furnished you with information regarding certain practices which you will put in practical use shortly and that they would all effect a saving.

The Witness: Yes, sir.

Commissioner Poor: Now, when we get down to the proposition of figuring what your probable expenses in the future should be will it be fair for the Commission to cut off from your past experience as to cost, some amount?

The Witness: I don't think so, Mr. Poor, for this reason. It has been my experience in the telephone business and especially in traffic, that each year our costs, the cost of doing business increases to us. We know that our oper-

ators' wages have increased tremendously during past [fol. 2870] years. We know that in our larger cities the cost of handling traffic is bound to increase for the reason that as we grow and introduce new offices, our trunk calls become greater.

A very good example of that is Akron. Some years ago we were able to complete every call offered in Akron direct in the A board. Now we require a trunk unit of one. All new business taken on during the past two years in Akron, and all business, we will take on in the future, will involve trunking to B board. That increases the operating expense 50 per cent. As I see it, these A. T. & T. developments tend to keep the normal increase in the cost of doing business, down, but as I see it, our future problem in Ohio will still continue to have an increase and if we didn't have these developments, the increase would be of course much greater.

Commissioner Poor: Well, if your revenues are computed on the number of stations, the patrons that you have in the past year, applying the new rate to it, you should apply your expenses to the same number of subscribers, on your present business and not on your increased business and if you did that then would it be justifiable in shading off some of these probable savings?

The Witness: I don't see how we could. For instance, as traffic engineer of the Ohio Bell Company, I have made a great many studies for future periods and in practically every case, our studies indicated that the trend of costs was up. Take as an example, has the number of subscribers [fol. 2871] in a given exchange increase our calling rate per station increases. That is there are greater possibilities of calling. We have experienced that all through Ohio. That, added to the necessity for trunking calls at a 50 per cent increase over completing them in open multiple and added to the increase in operators' wages, it seems to me that those things are bound to cause an increase in the cost of doing business and that these economies will tend to offset some of them of course.

Mr. Postle: I believe you stated in answer to Mr. Poor that one of the reasons that you took into consideration, the increase in operators' wages, is that correct in answer to his question?

The Witness: Yes, we have made studies where we found that to be necessary.

Mr. Postle: Did you not testify in chief a little while ago that the straightforward trunking system dispensed with some of the operators?

The Witness: Yes, that is right, but that might not offset in other words the increase that we will have to make in the wages of some 1500 operators. The point is this, that just as soon as we have put into effect during the next few years, the increase in the operators' wages at Cleveland, which is not at all improbable, and we will say the increase will be $600,000.00. Now, by the use of the straightforward method, we will offset say $250,000.00 by that, leaving a net increase of $350,000.00.

Chairman Marshall: Is that all?

[fol. 2872] Mr. Burr: That is all at this hearing if Your Honor please.

COLLOQUY

Mr. McConnaughey: If the Commission please, before we separate, I would like to call attention to one thing. If Cooper Exhibit A-2, which is the income and expense statement, we think that it will be very helpful to have those elaborated somewhat. I know in introducing this sort of evidence the company has used the form which is considerable more detail. I have at my hand here a similar exhibit that was used in the toll case, for instance, in which the receipts and expenditures are set forth by classification of accounts, which we think would be very helpful. We would like to have the company put in if it will a statement somewhat in the form used in the toll system case elaborating this exhibit and also a comparative statement during the past five years since the organization of the Bell Company. Cannot that be done?

(Here counsel, witness and others confer.)

Chairman Marshall: What do you say as to furnishing this; will you furnish that exhibit?

Mr. Cooper: We can show the details for 1925 in the form that Mr. McConnaughey has indicated.

Mr. McConnaughey: Mr. Cooper hesitates about giving us the previous years. We think that that would be useful

for comparative purposes and we would like to see it in the record. The history of this company is so short that it is a very simple matter and it would not add very much to the testimony to make it parallel columns or by similar [fol. 2873] accounts—in similar detail items, we think it would be useful.

I don't believe that the Commission will want finally to base any rates in this case on the experience of a single year and as I say the history of this company is so short that it is not a big task and it certainly will not encumber the record.

Mr. Burr: We can't show you the proposed value of our property for any other year.

Mr. McConnaughey: That is very true.

(Here counsel and witness hold further consultation.)

Mr. McConnaughey: That is the thing we are interested in.

Mr. Burr: What?

Mr. McConnaughey: The proposed value of your property is more or less arbitrary anyhow.

Mr. Tolles: We cannot supply that.

Mr. Hagenah: It goes to the earnings and operating expenses, according to the accounts carried on your books, from the Interstate Commerce Commission classification, that is shown earnings from toll, earnings from exchange and what other revenue items there are and then in operating expenses under the subject of traffic—In the subject of traffic accounts, in the subject of maintenance, under special maintenance account as per books, the history dating from the last part of 1921—only a few months of the year, that you can cover, and then give us the annual results for 1922, '23, '24 and '25, a comparative statement in a [fol. 2874] four or five column statement. That is generally put; in in the case of one year, it is hardly sufficient. The figures have already been made public in the annual reports of the company. It is merely a matter of bringing them down in a concise, simple exhibit for comparative purposes.

Mr. Cooper: There have been a good many changes, Mr. McConnaughey, and the reason we have filed here 1925, is that in the previous years, we were operating in a good many of our exchanges, two separate systems.

Mr. Hagenah: While that is true, if the rate should be

based on one year or two years or three years,—but there will be no evidence here what the books do show for each of those four years.

Mr. Cooper: I am merely calling attention to the fact that the expenses or revenues either for any year prior to 1925 would have no significance whatever with respect to the traffic and the service as it was operating during 1925.

Mr. Hagenah: Well, we don't know that. That is an important conclusion. The books are certainly available. I understood that they were. And the simplest thing to do would be for the company to put in such an exhibit.

Mr. McConnaughey: Of course it is not up to us to tell you how to put in your case. Suppose you furnish the 1925 figure and 1924 figure and let us have the other and that will answer.

Mr. Burr: The point is there is no year reflects the situation as it is today except 1925.

[fol. 2875] Mr. Cooper: That is my point. That is the only reason, Mr. McConnaughey, that I am suggesting the information would not be of any value or any help.

Mr. McConnaughey: Well, suppose you classify the exhibit for 1925 and give us the information with reference to the other years and let us see what we care to make of it.

Mr. Cooper: Yes, I can do that. There will be no trouble about that.

Chairman Marshall: We don't think that that is an unreasonable requirement; the Commission don't think that that is an unreasonable requirement to give that all for the comparative purposes. You say it can be done, can't it?

Mr. Cooper: Of course, it is all on file here, with the commission now.

Mr. Hagenah: Well, what is the objection to putting it in a centralized comparative statement? It involves a certain amount of clerical work; your accountants are familiar with the classification and know how to present that matter. It seems an exhibit of that kind is of first necessity..

Chairman Marshall: Then you will furnish that will you?

Mr. Cooper: Beg pardon?

Chairman Marshall: Then you will furnish that will you?

Mr. Cooper: Yes, I guess if the Commission tells us to, I guess there is nothing else to do. Is that right?

[fol. 2876] Chairman Marshall: All right, the 30th, ten o'clock.

And thereupon the further hearing of this case was adjourned until Tuesday Morning, March 30, 1926, at ten o'clock A. M.

[fol. 2877] Tuesday Morning Session

March 30, 1926.

And thereupon the further hearing of this matter was resumed pursuant to adjournment.

Present:

Karl E. Burr, on behalf of the Ohio Bell Telephone Company.

W. G. McConnaughey, and Fred Postle, on behalf of Protestant.

Chairman Marshall: You may proceed, gentlemen.

Mr. Burr: Mr. Crunden may be sworn and take the stand.

[fol. 2878] And also ALLEN B. CRUNDEN, called on behalf of The Ohio Bell Telephone Company, being first duly sworn, testified as follows:

Examined by Mr. Burr:

Mr. Burr: Before commencing with Mr. Crunden, we desire to offer in evidence the Order of the Interstate Commerce Commission of March 18, 1920 with respect to depreciation, having reference to the rules described by the Interstate Commerce Commission for depreciation with reference to all carriers, of which The Ohio Bell Telephone Company is one. It may be marked for identification Company exhibit X-1. (Afterwards corrected to be Company Exhibit X-2).

And thereupon the order so last above offered is introduced and admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted marked Company Exhibit X-2 and made a part hereof.

Mr. McConnaughey: Is this the order for the investigation, Carl?

Mr. Burr: Probably the best way to answer that will be to read it. The Commission first referred in the order to

Section 435 of the transportation Act of 1920 and after quoting it say:

"Information received by the Commission indicates the [fol. 2879] existence of doubt as to the propriety of carriers making any charges to operating expenses with respect to depreciation prior to such time as the Commission shall prescribe the specific percentage of depreciation it shall be charged.

"The purpose of this circular is to dispel any such doubt as may exist in the minds of accounting officers.

"Until the Commission shall otherwise order, all carriers subject to the act to regulate commerce should continue to observe the requirements respecting the accounting for depreciation which are embodied in the effective accounting classification prescribed by the Commission, with the respective classes of carriers."

(Signed) George B. McGinty.

Q. Are you the same Mr. Allen B. Crunden who testified before this Commission in the so-called toll rate case A. U. R. P. 124 on the Dockets of the Commission in the year 1924?

A. Yes, sir.

Q. At that time, Mr. Crunden, I believe that you were connected with the comptroller's department of the American Telephone & Telegraph Company which for the purpose of brevity has been heretofore and will be hereafter referred to from time to time as the American Company. Are you still connected with the comptroller's department of the American Company and engaged in the same general lines of work and study as those referred to in your previous testimony?

A. That is correct, yes, sir.

[fol. 2880] Q. What, if anything, has your department to do with the financial service rendered The Ohio Bell Telephone Company by the American Company?

A. The comptroller's department is the department that is principally involved in rendering the financial services furnished to the Associate Companies under the License Contract. That assistance takes the form of helping the companies in their temporary and permanent financing, advising them and assisting them as to what is best to be done from time to time.

The temporary financing has usually been by way of advances; that is the American Company has advanced its own money to the associate companies at a rate of interest on demand notes. The permanent financing comes up periodically. We, in our department, are constantly studying the situation of the Associate Companies and planning for future financing; when the appropriate times comes, we assist the Associate Companies in floating their bond issues or their securities.

Q. This temporary financing which the American Company does for the Associate Companies including the Ohio Bell Company is in anticipation of what if you know?

A. Well, it is temporary as its name indicates and it is in anticipation of the Associate Companies providing for its needs down to date by means of some permanent financing; then a new cycle begins where there will be a certain amount of temporary financing again until the time arrives when further permanent financing can be done.

The idea of the advances is to furnish a certain margin [fol. 2881] for the Associated Company to come and go between the times that it provides for its own permanent financing and needs, with the assistance of the American Company, and that is something that all the Bell Companies are able to do providing they earn a fair return upon their property.

Q. The ability of the Ohio Bell Telephone Company for example to do permanent financing is contingent upon what?

A. It is contingent upon its having sufficient earnings to be able to attract the necessary capital, that means to earn a fair return upon its property.

Q. Can you give the Commission some idea of the Bell System bond financing which has taken place during the past few years with the assistance of the American Company?

A. Well, our department has assisted the Associate Companies of recent years, among other things, in floating these large bond issues, namely:

"The Pacific Telephone & Telegraph Company May, 1922, twenty-five million;

"New England Telephone and Telegraph Company, June, 1922, thirty-five million;

"The Bell Telephone Company of Pennsylvania, January, 1923, thirty-five million;

"Illinois Bell Telephone Company, June, 1923, fifty million;

"The Southwestern Bell Telephone Company, February, 1924, fifty million;

"The Bell Telephone Company of Canada, March, 1925, thirty million;

[fol. 2882] "The Bell Telephone Company of Pennsylvania, October, 1925, fifty million;"

During that period the Comptroller's department has also assisted in the issuance of debentures of the American Company itself, November, 1923, one hundred millions; and January, 1925, one hundred twenty-five millions and those debentures have been used in the general development in the telephone business largely through the associate Companies.

Q. Were you formerly connected with The Central Union Telephone Company in Ohio which is now a part of The Ohio Bell Telephone Company?

A. Yes, I was Vice President and General Auditor of that company.

Q. Are you familiar with the property of The Ohio Bell Telephone Company?

A. Yes, sir.

Q. Have you made a study of the rate of return on the fair value of the property of a telephone company of the size and character of The Ohio Bell Company necessary to attract capital to the enterprise?

A. I have.

Q. As reflecting upon the rate of return, have you prepared a statement showing the amount, interest, rate, price sold of bonds and notes of Public Utilities offered publicly in the United States since January, 1925?

A. I have such a statement. It is entitled, "Bonds and Notes of Public Utilities Offered Publicly in the United States Since January 1, 1925, the Issues of $500,000.00 and Over"; it consists of 24 sheets and brings the record down to February, 1926.

[fol. 2883] Mr. Burr: It may be marked for identification Crunden Exhibit A-1 and it is offered in evidence.

And thereupon the paper writing so last above offered is

introduced and admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted marked Crunden Exhibit A-1 and made a part hereof.

Q. In this list of bond and note offerings which is Crunden Exhibit A-1, tell the Commission whether or not the list is complete or whether on the other hand you have simply chosen certain companies which have issued bonds and notes during the past year?

A. This exhibit includes all of the issues offered in the United States during the period where those issues amounted to over a half a million dollars.

Q. Yes.

A. And the information has been taken from the Commercial and Financial Chronicle, of New York; from the notices in the Wall Street Journal and the other New York newspapers where the official announcements of issues are ordinarily printed. I have included all the items in order that there might be no conscious selection or any "salting" of the list. I have taken the whole record in order that in the first instance it might speak for itself.

Q. How many companies shown in the list of issuers of bonds or notes have properties located in Ohio?

A. There are about twenty.

[fol. 2884] Q. Will you please discuss the exhibit briefly?

A. Well, this exhibit shows the names of the companies and a brief description of the type of issue, whether it is a first mortgage or a refunding mortgage and how many notes and bonds are to be outstanding; it shows the amount of the issue and the coupon rate of interest. It also shows the price at the original public offering and the yield at that price, that is, it shows the price paid in the open market by the first retail purchaser of the respective securities. It does not reflect the cost of the company of getting the money, that is the cost of syndicating and selling the bonds through the investment houses. It would of course be impossible to obtain that information for all of these issues. Nor is there anything in this exhibit for the incidental costs of bond issues which the mortgagor corporations have to pay, such as the engraving and registration of the temporary and final bonds, the fees of trustees, registrars and transfer agent——

Q. And legal fees?

A. And legal fees and the expert supervision of the issuance of the bonds. All of those costs would increase the

effective interest rate to the corporation. You might consider that the interest rate appears on the three modes, first of all, there is the coupon rate of interest——

Q. That is shown on the third column on the end?

A. From the end.

Q. From the end on the right, I should say?

A. From the right.

[fol. 2885] Mr. McConnaughey: Have you any information as to what the costs of issuing those bonds is ordinarily,—general information?

The Witness: Why, I have information on that for our own companies, and in a very vague way for securities in general. Of course it runs through a fairly wide range when you consider the whole market as you would in an exhibit of this kind.

Mr. McConnaughey: Have you any figures of any particular issue that you could give us?

The Witness: I can give you general figures for some of the recent Bell system issues. Considering that many of these recent issues are not thoroughly settled in the market, I would not like to give the figures for individual issues. I am perfectly willing to give a fair average figure.

Mr. McConnaughey: That will do.

The Witness: That is about three or three and a half points for the high grade Bell system bonds and that makes the difference of about one-fourth to one-third in the yield.

Q. One third of a per cent?

A. Per cent.

Mr. McConnaughey: You speak of the high grade Bell system bonds, do you distinguish between different bonds of the Bell system when you say that?

The Witness: No, I was thinking there, that the facilities of the Bell system for marketing large issues of securities are superior to those of many public utilities.

[fol. 2886] The effect is to make the bonds easier to sell, to require less work on the part of the syndicate managers and the salesmen of the investment houses, so that the bonds are sold more expeditiously and so many of them do not come back on the hands of the dealers, so that we are able to finance on favorable terms.

Mr. McConnaughey: That is all of that.

The Witness: I was saying that there might be what might

be called the coupon rate of interest. That is in the third column from the right. Then there is what you might call the market rate of interest and that would be in the last column of the exhibit.

Then there is what I call the effective rate of interest and that is the rate that the corporation has to pay after taking into account this cost of marketing the securities and keeping them marketed.

Q. The last column shows what?

A. That shows the yield to the first retail purchaser of the bonds.

Q. I notice in the list the issues of several foreign public utilities such for example as Aktiengesellschaft Sächsische Werke on Page 2. What effect on the bond market in the United States has the advent of such issues as that?

A. Why, the foreign Public Utility Companies are having recourse to the American market to a large extent and it is only the unsettled conditions in Europe that prevent them from having such recourse to a much more marked extent in my opinion; a high yield must be offered on such securities because it is not as desirable there, they do not [fol. 2887] afford as desirable an investment for an American; the effect is to tend to increase the yields slightly in general; that is it adds to the competi-on in the market for the available funds. There is only a certain investment fund available and these foreigners come in and take part of it. Well, that diminishes the amount to some extent for the other users of money.

Q. And to that extent it shows a tendency to increase the yield on American securities necessary to attract investors?

A. Yes, the influence is always in that direction.

Q. Have you prepared an exhibit which contains a summation of the several pages included in your exhibit A-1?

A. I have. It is entitled, "Average weighted yields at offering prices of bonds and notes of Public Utilities offered publicly in the United States, issues of $500,000.00 and over." and in this respect, Mr. Burr, I have taken the percentages all the way through from January 1922 to January, 1926. In that respect, it covers more territory than the other exhibit.

Mr. Burr: It may be marked for identification Crunden Exhibit A-2 and is offered in evidence.

And thereupon the paper writing so last above offered is introduced and admitted in evidence on behalf of the Ohio Bell Telephone Company and is herewith submitted marked Crunden Exhibit A-2 and made a part hereof.

The Witness: With that, Mr. Burr, I think it would be [fol. 2888] desirable to file a graphic chart which I have here and which is headed "Yields of public utility bonds and notes at offering prices." This chart covers the period from January, 1922 to December 1925. That will be Exhibit A-3?

Mr. Burr: It may be marked for identification Crunden Exhibit A-3, and is offered in evidence.

And thereupon the paper writing so last above offered is introduced and admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted marked Crunden Exhibit A-3 and is made a part hereof.

Q. Before discussing the exhibits, Mr. Crunden, I notice that exhibit A-3 is entitled "Yields of Public Utility Bonds and Notes." Do those bonds and notes refer to bonds and notes of public utilities offered publicly in the United States during the period covered by the exhibit?

A. Yes, they are the same exhibits that are shown in Exhibit A-1.

Q. Now, if you will discuss the two exhibits, if you please?

A. There are two columns in Exhibit A-2.

The first shows the weighted yields for each month. By weighted yields, I mean that I have not simply made a sum of the yields of the individual securities and divided that result by the number of securities to obtain a mere arithmetical average, but I have multiplied the amount of each issue by the yield and the original public offering in each [fol. 2889] case and have made a summation of that series, and I have then made a summation of the total amount of bonds issued and divided the one figure into the other so as to get the weighted average yield—in the same manner as you would obtain a composite depreciation rate——

Mr. McConnaughey: Just a minute, is that of the bonds issued in that month?

The Witness: Yes, sir.

Mr. McConnaughey: The issues for the month of January, 1922 for instance?

The Witness: Yes, that is correct.

Now, then, the weighted three months average which is shown in the second column is arrived at by a similar weighting process for three months, and using the resultant figure as the average for the middle month of the three; that is to say, I have averaged January and February and March and used the result for the three months moving period based on February; and similarly I have weighted March, April and May in together and set down the figure opposite April.

That is a recognized method of averaging figures so as to smoothe out the fluctuations to some extent and render the chart more significant and easily understood.

The graphic chart of Exhibit A-3 is based on the weighted three months' moving average. You will notice that the cost of money was falling all through the year 1922 and rebounded early in 1923 and since that time has been fairly [fol. 2890] constant with a very slight downward tendency.

Since the graphic chart on Exhibit A-3 was prepared, I have received from the detail men that made these computations under my direction, the three months average centered on January, 1926. The figure is 5.88. The corresponding monthly average yield for the month of February, 1926, alone is 6.25. That figure is high and is not specially significant because there are still a considerable number of foreign issues coming in and they increase the average shown by the exhibit.

If the foreign issues be excluded I find that the yields for December, January and February respectively—1925 and 1926—would be 5.61; 5.74 and 5.63.

Q. In arriving at the normal financial setup of such a company as The Ohio Bell Company, what other securities besides bonds must be taken into consideration?

A. Well, the fundamental type of security or evidence of ownership rather in corporations is of course the stock. There must be a solid sub-stratum of common stock, otherwise it would be impossible to issue or practically impossible to issue any bonds. It is customary in many cases to obtain a relatively minor part of the necessary funds through the issuance of preferred stock. The preferred stocks appeal to a relatively small number of people. They neither have the security of bonds nor the chance of a little extra earnings that the common stock has. They do have an appeal to a limited number of investors. It is customary

when preferred stocks are issued to issue them in a rela-
[fol. 2891] tively small amount.

Q. What have you to say as to the yields on preferred and common stocks of that character?

A. The general rate of return on preferred stocks in this country is seven per cent. If one were to pick out the normal rate or the mode of preferred stocks it would be the 7 per cent rate. There are some stocks that pay six one half per cent but the general rate is seven. I had occasion a short time ago to recommend to an enquirer a list of preferred stocks which would be safe and at the same time give a fair yield and I was able to suggest to this inquirer seven preferred stocks, highly rated by Moody on which the dividend rate was 7 per cent and one on which the dividend rate was 6 per cent. And the one on which the rate was 6 per cent could be obtained on favorable terms, which made it average up well in yield with the others.

Our Bell system preferred stocks have been in the past generally 7 per cent. We have some six one half per cent preferred stocks now, but they are very limited in amount and we expect in the future that our rate will range somewhere between six and a half and seven per cent. We don't know just where—I don't know just where.

Q. What about the yield?

A. There is, of course, some cost of flotation on preferred stocks, but it is not large now.

Q. Proceed?

A. On common stock, the general rate for common stocks is 8 per cent. In the telephone business, experience shows that a common stock, paying less than 8 per cent will not [fol. 2892] as a long-pull proposition, and in the various stages of the business cycle, remain above par at a sufficient premium to render the stock attractive and enable the telephone companies to obtain additional money, as they must, regardless of good and bad times.

The standard dividend rate of the Bell system companies is 8 per cent. That is general throughout the country and the principal electric light and power companies pay 8 per cent, such as The Commonwealth Edison & Detroit Eddison, Southern California Edison, and others of that highgrade type.

Q. Based on your study of the financial markets in recent years, and particularly the markets for public utility se-

curities, also upon your study of the cost of money to public utility corporations, and the normal method of raising that money by the issuance of corporate securities, what in your judgment would be a or the proper financial structure of a company such as The Ohio Bell Company taking into consideration bonds, preferred stock and common stock?

A. Well, as one good plan and the plan that I would personally recommend, I would say that 35 per cent of the total could very well be covered by first mortgage bonds; and 15 per cent would be about right for preferred stock leaving 50 per cent as a good substantial foundation of common stock.

Now, it would be possible to issue more than 35 per cent of bonds. I think the limit would be about 50 per cent, but in my view it would not be advantageous to go to the limit [fol. 2893] at once, because you should have some recourse in emergencies. It would be unwise to sell all the bonds that you reasonably could at one time where there was no pressing necessity to exhaust all your bond-issuing capacity.

Therefore, my idea would be to issue about 35 per cent and have that, the difference of about 15 per cent as assurance that you can issue more bonds if some stringent condition arises, where it becomes necessary, because I don't think that you could go above 50 per cent with either safety or advantage.

Q. Would the issuance of 50 per cent in bonds instead of 35 per cent affect the rate of interest which the bonds would have to bear in order to make them equally saleable?

A. Yes, I think it would.

Q. In what way?

A. Well, you would have to increase the yield somewhat to compensate for the slightly inferior attractiveness of the bonds.

Q. That is to say, in the——

A. As you increase above 35 per cent.

Mr. McConnaughey: What should these percentages be based on, what amount—what value?

The Witness: Well, I am considering now the representative cost of money merely. I can stop and answer that question, but we will probably develop that as we go along if you don't mind.

Mr. McConnaughey: All right, that is all right.

The Witness: I am trying to avoid too long answers.

Mr. McConnaughey: All right.

[fol. 2894] Q. In the present condition of the financial market what in your judgment would be the cost to The Ohio Bell Company of issuing bonds and preferred and common stocks in the common proportions which you have advised.

A. In my opinion, with the set-up in those proportions and with the facilities that the Bell system has for financing, we might be able to market those bonds at 5½ per cent including the cost of flotation. I am taking that as rather a minimum figure.

It might be higher than that, but the circumstances would have to be quite exceptional to have it lower; but I would consider that a very conservative figure—5½ per cent.

Q. Could the company in your judgment issue those bonds at that rate in its present condition, that is to say with its rate situation as it now is?

A. It would be an inopportune time to do it. It is not a thing that you should try to do when you are not sure that you can do it. This is really one of those things that ought not to be done unless it is going to go over in good shape because a disaster or a failure in an enterprise of this kind or a failure in an enterprise of this kind reacts on the corporation for a very long time.

Q. The ability of the company to market bonds at that cost as well as preferred and common stocks to which you refer later, is dependent upon the situation with respect to the company?

A. Well, it is dependent on its ability to achieve a fair rate of earnings on its property.

[fol. 2895] Q. Proceed if you will with a discussion of the preferred and common stock?

A. Well, for the preferred stock, taking a conservative figure, I would say six three-fourths per cent including the cost of flotation and for the common stock, eight per cent. In reference to that eight per cent this is in my mind, that the telephone was invented in Massachusetts and telephone stocks have been highly regarded in New England. At the present time, between one third and one half of all of the telephone investers in the country are in New England. One of our endeavors at present is to try to diffuse investment in the telephone business more generally over the country so that it does not bear such a close relationship

to the prosperity of one section, even though that section be one of the most important and the one that has the biggest investment fund.

The New England Company used to pay 6 per cent and that was——

Q. On what?

A. On its stock.

Q. Common?

A. Common stock, and that was ample to keep the stock above par. Before the war it saw that 6 per cent was going to be insufficient, and with that in view increased the rate to 7 per cent, and in course of time it became clear that six per cent would have been insufficient.

Then the company found it necessary to increase it to 8 per cent and it is selling to day about 114 to 117 and paying 8 per cent. Of course the New England Company is a [fol. 2896] very highgrade telephone company. Shall I continue, Mr. Burr?

Q. If you will, discussing the annual charges on these different classes of securities.

A. I meant that I would like to bring those figures that I have given down to simple, understandable composite. Taking $35.00 out of every one hundred dollars at the rate of five one-half per cent, would give us bond interest of $1.93; taking $15.00 at six three-fourths per cent would give us $1.01; and taking $50.00 at eight per cent would give $4.00, the total of those three figures being $6.94 on every $100.00 as the current annual outgo; that is the amount that would be paid in season and out of season in order to have those securities esteemed by the holders and I think that 6.94 is the minimum figure.

Q. Now that does not take into consideration the retention of any earnings in the business as a recourse in the case of emergencies and to provide a margin for dividends?

A. No, I have been looking at the proposition so far from the standpoint of the person who held the securities, but from the standpoint of the corporation itself it would be necessary to earn more than 8 per cent in order to pay the 8 per cent. There would have to be a margin for surplus to cover those risks that are inherent in any industry and which would not be taken care of out of the ordinary and necessary expenses of operation. In public utilities, as in

every line of business, there are such risks and they have to be provided against by a surplus.

[fol. 2897] The investors understand this of course and they must be reasonably assured of the regularity of the interest and the dividend payments through the existence of a surplus which will satisfy them of the ability of the company to ride out lean years, and other various and commercial disturbances which in the absence of a surplus would cripple or even substantially destroy the financial integrity of the corporation.

Q. Give, if you please, a few specific examples of the reasons which make the carrying of a surplus a necessity?

A. Well, there is that extraordinary obsolescence or supersession that may attach to an industry as a whole as distinct from your ordinary operating obsolescence which attaches to particular items of equipment and which is taken care of through depreciation.

There is that minor obsolescence which is a part of depreciation and which is taken care of in operating expenses, and which threaten only specific items of equipment; and then there is that general danger of obsolescence or supersession which threatens the economic value of the going institution as a whole.

For instance, during the recent past, there has been considerable apprehension in the minds of the individuals and public as to whether radio would not have some detrimental effect upon the telephone industry. I believe that that is not so. Radio will have its own useful field and the telephone will continue to have its own useful field and the two are complimentary rather than one being able to swallow [fol. 2898] the other; but there is an apprehension which has its effect upon investors.

Now, consider for example the wooden ship industry which began, we don't know how long before Christ and continued as a more valuable and expanding industry down to the time that Ericsson invented the steel ship; and then it went into the discard at rather a rapid rate.

The steel ship, or the iron ship rather, brought about the obsolescence of the wooden ship building industry in many parts of the world.

Consider as another instance the bicycle business when the automobile came into the market.

Consider the effect on the express business, of the advent of parcels post.

Consider the effect on earnings, of the advent of the auto truck in connection with electric railway work. There is an obsolescence that is entirely distinct from depreciation. It has to do with the earning power of the going institution.

Another item that I would just mention that investors have in view is major catastrophies, such as the San Francisco earthquake and the Johnstown Flood, the St. Louis tornado and other things of that kind that come along and create loss and suffering to the whole community. There is a considerable temporary loss in revenue or current income and that must be met if at all from accumulated surplus. If there is no surplus an event of that kind is very likely to force the utility into very bad figures for the time being.

[fol. 2899] Then there are business depressions which bring about decreases of gross and net revenue. What is fair under ordinary conditions may not be fair in times of business depression. Public Utilities are subject to the same economic force as other businesses and they have their bad years and good years.

Then there are also those shortages in net income which occur during the period, frequently somewhat lengthy, which elapses after a higher rate schedule is needed to meet increasing costs of operation and prior to the date when after unavoidable delays, legitimate increases are eventually placed in effect. That has been quite a factor in the minds of many investors and it is distinctly pertinent to the telephone business because telephone business is going through a situation where it is facing increased costs due to the turnover of its plant and equipment to a higher price level. Before the war you could buy the quantity of plant proportionate to the average telephone station for about one hundred thirty-five to one hundred fifty dollars or some such a matter, depending on the condition of the country and the amount of plant required; but labor has doubled; substantially everywhere, and materials have gone up correspondingly and now it costs twice that amount or some such figure—I am not trying to give exact figures—to provide the same quantity of plant. That new plant must be constructed at the higher price level and all old plant as [fol. 2900] it comes out of service must be replaced or re-

constructed at the same higher price level. The result of it is that the telephone company being an enterprise that operates through a fixed plant which turns over in what is relatively a gradual way to this higher price level is now feeling the increase in labor and commodity prices which began many years ago.

If you can conceive of a man who does business entirely through his inventory and to take a very simple and extreme illustration, take the man on the corner with the peanut stand. If the price of peanut- goes up, he buys and pays for those the next day at the higher price; he becomes automatically on the new price level.

Let us take an extreme instance of the opposite kind, for example, a water plant in a town that is not growing, where the expenditure was all made at the old pre-war low costs. Now, the cost of operation may not be large; for example, it may be operated by water power. Then that enterprise would not feel the turnover to the higher price level for a relatively endless time. In between those two extremes are various kind- of investments and the telephone company is somewhere in between. Its plant in turning over to the higher price level at the present time and during the next few years, and it is therefore now that telephone companies are feeling the worst effects of the price uplift that began back in 1919 and 1920 and that is a factor in this margin of surplus in my opinion in the minds of investors.

Q. What in your judgment is the amount which a com- [fol. 2901] pany such as the Ohio Bell Company should put aside annually for surplus?

A. It should set aside from three to four per cent on its stock on the assumption that stock is outstanding for about 50 per cent of the total. In other words, it should earn on its stock between 11 and 12 per cent and that would mean that it would earn on each $100.00 about $1.50 or $2.00.

On the stock it would earn for surplus three or four per cent.

Q. Taking out your illustration which takes into consideration 35 per cent of bonds and 50 per cent of stock and taking also into consideration the amount required for surplus what is the total as the minimum cost of money which a company such as the Ohio Bell Company should have? I think you found that without the surplus a rate should be $6.94, did you not?

A. I did, yes.

Now, using the expression cost of money as inclusive of surplus, which you really must do to get the picture because you cannot pay out the dividend without the margin of surplus to insure it, I would say that the figure would be $6.94 previously mentioned plus $1.50 or $2.00 which would be from $8.44 to $8.94. That is cost of money from the standpoint of the corporation and looking towards the investor.

Q. In view of all that you have said and based upon your knowledge of telephone financing, including the cost of money to such companies as the Ohio Bell Company, and based also upon your investigation of the subject of Public [fol. 2902] Utility securities generally, will you please relate the cost of money, inclusive of the necessity for a surplus on the one hand, with the minimum rate of return on the fair value of the property of a company such as the Ohio Bell Company on the other.

A. Well, the cost of money and the fair return are two distinct propositions in my view. A fair return is a fair rate of earnings which the company can achieve as the result of the rendition of its service to the users of the service. It sells service or commodities which people want and in return they pay money to the corporation. That money is the company's earnings and a fair rate of earnings resulting from those operations is a fair return.

The cost of money in my view relates to the dealings of a corporation with those from whom it must obtain money in order to float its business and continue in business and provide for growth as the corporation requires to grow. That is the corporation stands in a dual relationship:

It has its relationship towards the customers; and a fair return is then a matter of the corporation itself. It has a relationship towards its investors and there the cost of money is a sort of a domestic or private arrangement between the corporation and the investors.

Q. That being so and without attempting to include again in my question all the factors included in a previous question, what in your judgment should be the minimum rate of return on the fair value of the property of The Ohio [fol. 2903] Bell Company?

A. In my opinion, the minimum should be 8 per cent on the fair value of the property.

Q. Will you explain some of the reasons for your answer?

A. Going back to cost of money for a moment: The cost of money can be considered in general as relating to groups of enterprises or all enterprises and it can be considered in particular as relating to individual enterprises:

It is the aggregate arising from all of the individual cases that produce the average. We go there from the individual cases to the group. A fair return is what arises as a fair rate of earnings among corporations in general or in the group and then it is possible to compare the experience in a particular case with the average or general experience.

In this view, a fair return rests fundamentally upon the custom of business men. After enterprises of a certain class arise and take their place in the business world, there comes to be a sort of a general concensus as to what may be taken as a fair rate of earnings for enterprises of that kind having in view the times and the part of the country and the especial conditions of the particular kind of enterprise and the risks and uncertainties associated with it.

Business men who have an insight into a large number of enterprises, such as bankers or men who deal in investments, or business men who are interested in such enterprises, or about to engage in other enterprises, the man- [fol. 2904] agers of enterprises who are operating properties or making comparisons with other similar properties come to have this general informed opinion as to what constitutes a fair return. It is possible—in fact it is quite pertinent I think to relate the cost of money to fair return along legitimate lines. For example it will be quite consistent to assume an enterprise having sound value or fair value, and, granting that fair value, it would be quite consistent to issue securities for the amount of it and not in excess of it, and in connection with the flotation of such an enterprise or in connection with its transfer or sale.

The cost of money in that case would have to be covered before the concern would be a going concern. It couldn't do business and earn money unless it could pay its cost of money including a reasonable margin of surplus which would assure the investors that their dividend and interest payments would be forthcoming regularly and that the concern would take care of its growth if growth was necessary to insure the integrity of the enterprise.

From that standpoint a fair return must be sufficient to

provide for the flow of money into the business. In view of those considerations and my general study of this subject after being in the telephone business for a number of years and particularly while having been studying these questions in the comptrollers department of the American Company, which has the responsibility of assisting the associate companies in their finances, I believe that 8 per cent is the minimum of a fair return for a telephone company of the [fol. 2905] kind of the Ohio Bell Company.

Q. That amount in your judgment is necessary to insure the continued stability and growth of the enterprise?

A. It is, Mr. Burr.

Q. In the so-called rate case heretofore referred to as A. U. R. P. Number 124, on the dockets of the Commission you testified at some length with respect to the accounting service rendered by the American Company to the Ohio Bell Company under the so-called license agreement between those two companies; tell the commission whether in general those services have been continuing either in the same general amount or in an expanding and increasing amount during the past two years?

A. The same classes of service are being rendered; the force is slightly larger than it was; the volume of service rendered I think on the whole is about the same, proportionate to the size of the companies.

Mr. Burr: You may cross-examine.

Mr. McConnaughey: We do not care to cross-examine Mr. Crunden at this time. There may be some after we have analyzed his exhibits.

Mr. Burr: Well, Mr. Uprichard may be sworn.

Mr. McConnaughey: Let me ask him just one question.

[fol. 2906] Cross-examination.

By Mr. McConnaughey:

Q. What is your idea, Mr. Crunden, of fair value as you have used it in considering a fair rate of return?

A. Fair value as I used it is the value of the going concern as a business that is operating and making money, not misconceived or a failure, but having a proper place in the economic life of the community where it is situated.

Mr. McConnaughey: All right.

Mr. Burr: Immediately prior to Mr. Crunden's testimony

we offered in evidence the order of the Interstate Commerce Commission of March 18, 1920 and it was marked for identification Company Exhibit X-1. I find by going over the files that in the toll rate case, the license contract between the American Company and the Ohio Bell Company was marked as Company Exhibit X-1, and inasmuch as all of the evidence and all of the exhibits in the toll rate case are now a part of this case by virtue of the Commission's solidation order, I suggest that the Interstate Commerce Commission's order number as an exhibit be changed to Company Exhibit X-2 unless somebody in the room recalls that there has been an exhibit so marked. Do you remember, Mr. McConnaughey about Company Exhibit Number 2?

Mr. McConnaughey: I do not remember.

Mr. Burr: I think we are safe in using that.

Mr. McConnaughey: It can be changed if we find that [fol. 2907] there is any.

And thereupon the exhibit so last above referred to and having been previously offered and admitted as Company Exhibit X-1 is for the purposes of identification and distinction marked Company Exhibit X-2 and so made part hereof.

[fol. 2908] And also JOHN UPRICHARD, called on behalf of The Ohio Bell Telephone Company, being first duly sworn, testified as follows:

Examined by Mr. Burr:

Q. Your name is John Uprichard?

A. Yes, sir.

Q. What, if any, connection have you with the Ohio Bell Telephone Company?

A. I am the Vice President and General Auditor of the company.

Q. Briefly, what has been your experience in the telephone business?

A. I have been connected with the accounting department generally for about 31 years.

Q. With the accounting department of what company?

A. I started with the Pacific Telephone and Telegraph Company, the Sunset Telephone & Telegraph Company in

San Francisco; I was auditor of disbursements for the so-called Central Group in Chicago consisting of the Chicago Telephone Company and the Central Union Telephone Company, the Wisconsin Telephone Company, the Michigan State Telephone and the Cleveland Telephone Company; I was Vice President and General Auditor of the Central Union Telephone Company and was General Auditor for the receivers of the Central Union Telephone Company during the receivership; I was Vice President and General Manager for the Indiana Bell Telephone Company for about 10 months and I have been Vice President and General Auditor of the Ohio Bell Telephone Company since January 1st, 1922 I think.

[fol. 2909] Q. As Vice President and General Auditor of The Ohio Bell Telephone Company, are you familiar with the accounting and statistical services rendered by the American Company to your company?

A. Yes, sir.

Q. Has the Ohio Bell Company received such service from the American Company during the past two years?

A. They have.

Q. Are you familiar with the accounting and statistical services received by the Ohio Bell Company from the American Company prior to 1924?

A. Yes, sir.

Q. Are you familiar with the testimony on that subject in the so-called toll rate case Number A. U. R. P. Number 124 on the dockets of the Commission?

A. Only in a general way.

Q. But you know there was such testimony given?

A. I know there was such testimony given, yes, sir.

Q. Have you prepared a statement of the part of the accounting and statistical services received by your company from the American Company during the past two years?

A. I have.

Mr. Burr: The services are divided into eight standard groups and for the purposes of identification may be marked Uprichard Exhibit 6, Uprichard Exhibit 6-A, B, C, D, E, F and G respectively.

And thereupon the exhibits so last above referred to are for the purposes of identification marked Uprichard Exhibit 6, 6-A, 6-B, 6-C, 6-D, 6-E, 6-F, 6-G.

[fol. 2910] Mr. Burr: All the exhibits just referred to are offered in evidence.

And thereupon the exhibits so last above offered are introduced and admitted in evidence on behalf of The Ohio Bell Telephone Company and are herewith submitted marked Uprichard Exhibits 6-, 6-A, 6-B, 6-C, 6-D, 6-E, 6-F, and 6-G, and made a part hereof.

Q. Exhibit 6 as I understand it, Mr. Uprichard, is a summary of certain of the general and specific accounting and statistical services received by your company from the American Company during the years 1924 and 1925; is that correct?

A. Yes, that exhibit is merely the summary of the Uprichard Exhibits 6-A to H inclusive.

Q. Where are listed the accounting circulars, bulletins and letters received by your company from the American Company during those two years?

A. Uprichard Exhibit 6-A Sheets Numbers 1 and 2 show a list of certain accounting circulars, accounting bulletins and accounting letters received by the Ohio Bell Telephone Company from the American Telephone and Telegraph Company in the years 1924 and 1925.

Q. Uprichard Exhibit 6-A consists of two pages, does it not?

A. Yes, sir.

Q. Uprichard Exhibit *Exhibit* 6-D lists under general and accounting services consisting of letters concerning general miscellaneous accounting matters received by your company from the American Company during 1924 and '25; what is [fol. 2911] the difference between the letters referred to in Exhibit 6-A and those in Exhibit 6-B?

A. Well, those in 6-B are merely letters received from the American Telegraph and Telephone Company giving advice on minor matters and routine matters while those in Exhibit 6-A are regular circulars and bulletins and letters issued to the several companies for their guidance,—several associate companies.

Q. What is the scope of the Uprichard Exhibit 6-B?

A. 6-B shows a list of certain specific services consisting of visits of American Telephone & Telegraph representatives to Cleveland concerning accounting matters received by The Ohio Bell Company from the American Telephone

& Telegraph Company in the years 1924 and 1925. This exhibits shows the purpose of the visit and the period of the stay of the American Company's representatives and shows a total of 211 days.

Q. What is the subject of Uprichard Exhibit 6-D?

A. 6-D is a list of certain statistical services received by the Ohio Bell Company from the American Telephone & Telegraph Company January, 1922 to December 31, 1925. It is divided into or consists of Sheets Numbers 1, 2 and 3 and divided into three parts:

One is specific service other than conference;

Second, conferences with representatives of the American Telephone & Telegraph Company, some in Cleveland and some in New York, and

Section three are shown services covering different items. [fol. 2912] Q. Uprichard Exhibit 6-E, covers what subject?

A. 6-E is a list of certain specific accounting services consisting of letters of advice concerning miscellaneous accounting problems received by The Ohio Bell Company from the American Company in the years 1924 and 1925.

Q. Those are general or specific problems of your company?

A. Well, those are specific problems consisting of replies from the American Company to the Ohio Bell Company, to letters sent out by the Ohio Bell Company asking for advice.

This shows a total of 70 letters in 1924 and 84 letters in 1925.

Q. Uprichard Exhibit 6-F sheets 2 and 3 is a list of what, if you please?

A. That is a list of so-called standard forms received by the Ohio Bell Company without charge from the American Company for 1924 and '25. This list of several forms and general and brief forms furnished shows a total of 44,360 forms.

Q. Well, in general has the American Company charged your company for the service covered by your exhibits?

A. No, sir, they have not.

Q. What is the subject of Uprichard Exhibit 6-G?

A. 6-G is a statement of the audit service received by The Ohio Bell Company from the American Company for the years 1924 and 1925.

It covers from the year 1924 an examination and audit

of the accounts and records of the Ohio Bell Telephone Company including the issuance of a certificate of audit.

[fol. 2913] Q. Yes. When you said in your previous answer, the service had been furnished without charge, you me-t without charge as may be covered by the payment which The Ohio Bell Company makes to the American Company?

A. That is correct; I meant without a specific charge for those services.

Mr. Postle: The fact that your department has an audit by the American Company is no reflection upon your department?

The Witness: No, sir. If the American Company did-n't make that audit, I presume the officers and directors of the company would have some outside auditors make that audit for us which would cost the Ohio Bell Company quite a sum of money.

Q. For the year 1924, the number of man days involved in examination and audit of the Ohio Bell Company by the auditors of the American Company was 434 days as I make it?

A. That is correct.

Q. Will you be able at some later point in the case to give the Commission the number of days for the year 1925 in case the Commission desire- it?

A. The work is not quite completed at this time; the auditors are still with us and just when they will complete their work for the year 1925, I can't say at this moment, but perhaps within the next few weeks I would be able to give you that.

Q. Well, the time so far spent is a substantial amount is it not?

A. Yes, sir.

[fol. 2914] Q. Compared with 1924?

A. In general, I would say yes.

Q. Have all the services covered by your exhibits, 6-, 6-A to G inclusive been received by the Ohio Bell Company from the American Company during the past two years?

A. (No response).

Q. Did your company actually receive those services?

A. Yes, The Ohio Bell Company has actually received those services. I was just thinking of one of the exhibits here which lists the services from January, 1922.

Q. Well, with that exception?

A. With that exception, yes.

Q. Have you copies of any of the letters, circulars and so on covered by your exhibit so far offered in evidence?

A. I have—don't take them for the record—didn't I give you some copies of those circulars?

Q. Yes, you are right.

A. I think you have them. I have a few examples.

Mr. Burr: The first one may be marked Uprichard Exhibit Number 7.

And thereupon the paper writing so last above referred to is for the purposes of identification marked Uprichard Exhibit Number 7.

The Witness: Copies of all of those bulletins, letters and circulars are necessary; of course they can be furnished, but that would take up quite considerable space and con-
[fol. 2915] siderable work in making copies.

Mr. Burr: At this time, we will only offer in evidence a few typical examples with the understanding that if either counsel or the Commission desire the production of any of the items covered in the exhibits, including circulars, letters, bulletins and so on, they will be forthcoming.

The first one as heretofore suggested may be marked Uprichard Exhibit Number 7 and it is offered in evidence.

And thereupon the paper printing so last above offered is introduced and admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted marked Uprichard Exhibit Number 7 and made a part hereof.

Q. Will you explain that briefly if you please?

A. This is a copy of accounting circular Number 8G dated May 20, 1925, supplementing Accounting Circular Number 8. It is entitled Standard Telephone Accounts on Bell System, and has to do with changes, some minor changes in the definitions of several of the clearing accounts from Account 701 to 707 inclusive.

Mr. Burr: The next one may be marked Uprichard Exhibit Number 8 and is entitled Standard Routine and is offered in evidence.

[fol. 2916] And thereupon the paper printing so last above

referred to is offered, introduced and admitted in evidence on behalf of the Ohio Bell Telephone Company and is herewith submitted marked Uprichard Exhibit 8 and made a part hereof.

The Witness: This Uprichard Exhibit Number 8 is accounting bulletin Number 10- issued by the American Company dated January 1, 1925 and it is in connection with the general stable and garage equipment and stable and garage expense, routine, and is issued by the American Company.

Mr. Burr: Another one marked Standard Routine Overhead Expense may be marked Uprichard Exhibit Number 9 and is offered in evidence.

And thereupon the paper printing so last above referred to is offered, introduced and admitted in evidence on behalf of the Ohio Bell Telephone Company and is herewith submitted marked Uprichard Exhibit Number 9 and made a part hereof.

The Witness: This is American Company's accounting bulletin, 52A-1 dated August 1st, 1925 and is in connection with a standard routine covering overhead expenses, covering the—it makes some slight changes in a previous bulletin on that same subject.

[fol. 2917] Mr. Burr: The next is Uprichard Exhibit Number 10 and is an accounting letter Number A-18, the subject of which is classification of cost of removing drop wires.

And thereupon the paper printing so last above referred to is for the purposes of identification marked Uprichard Exhibit Number 10.

The Witness: Well, that is what it is, a two page letter issued by the American Company and these are issued, I understand to all of the Associate Companies for their information and guidance. It was issued by the Chief Accountant of the American Company.

Mr. Burr: Another accounting letter C-11, subject the establishment of some accounts of Account 265, General tools and implement, and account 703, tool expense, may be marked for identification Uprichard Exhibit Number 11 and is offered in evidence. It speaks for itself.

And thereupon the paper printing so last above referred to is for the purposes of identification marked Uprichard

Exhibit Number 11 and is herewith submitted and made a part hereof.

Mr. Burr: Another which is Accounting letter M-50, subject application of employees savings plan, consisting of the accounting letter itself and seven attached pages explaining the plan may be marked Uprichard Exhibit Number 12 and is offered in evidence.

[fol. 2918] And thereupon the paper printing so last above offered is introduced and admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted marked Upriehard Exhibit Number 12 and made a part hereof.

Q. Now, as I understand you, Mr. Uprichard, these Exhibits 7 to 12 inclusive are merely examples of the many letters, circulars and bulletins that are covered by your previous exhibits?

A. Yes, sir.

Q. And you will produce any of the others referred to in the exhibits at the request of either the Commission or counsel on the other side?

A. I can produce copies of any of those as may be required.

Q. Have you evaluated any summary for certain of the savings to the Ohio Bell Company as the result of the services rendered it by the American Company during the past two years?

A. Yes, sir, I have a statement which is temporarily marked Uprichard Exhibit 6-H.

Mr. Burr: It may be changed to Uprichard Exhibit 13 and is offered in evidence.

And thereupon the paper writing so last above offered is introduced and admitted in evidence on behalf of the Ohio Bell Telephone Company and is herewith submitted marked Uprichard Exhibit Number 13 and made a part hereof.

[fol. 2919] Mr. Burr: My attention is called to the fact that in the offering in evidence the exhibit Number 10 was inadvertently omitted and the exhibit is therefore offered.

And thereupon the paper printing so last above offered is introduced and admitted in evidence on behalf of The Ohio Bell Telephone Company and is herewith submitted

marked Uprichard Exhibit Number 10 and made a part hereof.

Q. Does Exhibit Number 13 evaluate all the services to your company due to the accounting and statistical service received by it from the American Company?

A. No, sir. I have only shown here or evaluated certain of the items that could be readily evaluated.

Q. Other services of value have been rendered by that company to your company during the past two years?

A. Oh, yes, number of such services, such as letters of advice and letters and circulars and items of that kind that it would be almost impracticable to place a valuation on.

Q. Will you explain briefly the services which have been evaluated on your Exhibit Number 13?

A. Exhibit 13 is a summary and shows the valuation of certain savings resulting from the services. Item 1 is the so-called accounting stub plan which contains a comparison of the cost of maintaining the accounts of subscribers under the multi-accounts ledger plan amounting to annual saving of $82,484.05.

That item is shown in considerable detail on attached sheet which may be marked for identification Uprichard [fol. 2920] Exhibit 14.

And thereupon the paper writing so last above referred to is for the purposes of identification marked Uprichard Exhibit Number 14.

Mr. Burr: The itemization of the toll billing typewriters' savings will be shown in Uprichard Exhibit Number 15 and the savings in the matter of audit service Uprichard Exhibit Number 16. They have been so marked and are offered in evidence.

And thereupon the paper writings so last above offered are introduced and admitted in evidence on behalf of the Ohio Bell Telephone Company and are herewith submitted marked Uprichard Exhibits Numbers 14, 15, and 16, and made a part hereof.

Q. Mr. Uprichard, if you please, will you take up Exhibits 13, 14, 15 and 16 and tell the Commission how you arrive at the savings shown in those exhibits?

A. Exhibit 14, that is entitled comparison of cost of maintaining accounts subscribers under the multi-account ledger

plan and accounting sub-plan. That is divided into three sections, A, B, and C. The first section is the saving in labor expense and that shows on Item 10 the annual saving in labor expense of $74,100.00 and is arrived at as shown in Items 1 to 9. I don't know as it is necessary to go into that [fol. 2921] in detail. It is all explained there.

Q. Well, the explanation will be forthcoming if either the Commission or the other side requires it?

A. It shows how the computations are arrived at.

Section B, the saving in house service expense. That is the annual savings which shows $2,191.80. That goes with the saving in the labor as shown in Section A.

Q. And due particularly to the savings in the number of employees?

A. Yes.

Q. Brought about under A?

A. That is correct.

Item C is the saving in the floor space expense amounting to an annual saving of $6,192.25. That floor space also goes with the saving in the number of employees as shown in Section A.

Mr. McConnaughey: Don't the rental that is included in the savings in that section include the items that are mentioned in B section?

The Witness: No, sir, the items in B cover light and heat, fuel, housekeeping expenses.

Mr. McConnaughey: Doesn't that all go into $1.27?

The Witness: How?

Mr. McConnaughey: Doesn't that go in with the rest, the $1.27?

The Witness: No, *it is* $1.27 is the actual cost.

Mr. McConnaughey: For the floor space itself?

The Witness: For the floor space itself and does not include the light and heat, fuel. The sum of those three items is $82,484.05.

[fol. 2922] The average number of subscribers' stations for the year 1925 was 520,241 and the annual saving in cost per station for the year 1925 based on these computations is 15.9 cents per station.

Q. Explain the savings referred to in Exhibit 15 if you please?

A. Exhibit 15 shows in some detail the annual savings

on the use of the so-called Bell system toll billing typewriters and shows a total annual saving of $4,859.18. And such amount was arrived at by taking the number of toll tickets billed per day per typist using the old style machines and the number of toll tickets billed per day per typist using the new style machines.

Q. What was the source of the new type of machines

A. That was the machine that was developed—I don't know that it was developed, but it was recommended to us for use by the American Telephone & Telegraph Company and tested out by them and based upon their recommendations we started on installing those machines.

Q. Has a study been made of the subject to determine whether or not these savings have actually been experienced by your company?

A. Oh, yes, they have actually been experienced; our revenue costs shows quite a reduction in cost per station.

Q. How did you arrive at the amount shown in Uprichard Exhibit Number 16.

A. Well, generally I took the time consumed by the auditors of the American Company for the year 1924 and evaluated those. I think I have it here.

Q. Now, that is the savings for one year based upon [fol. 2923] the experience of 1924 is it?

A. Yes, sir. I took 120 days at $50.00 a day for the senior accountant.

Q. Why did you do that?

A. Total $6000.00, and 300 days at $25.00 a day, a total of $7500.00, making a total of $13,500.00, so in this exhibit I called it $13,000.00.

Why, I had one of my people call up one of the public accountant firms and asked them what they would charge for such services and they said, $50.00 a day for senior accountants and $25.00 a day for junior accountants.

Q. This is the basis of the exhibit is it?

A. That is the basis of my estimate of $13,000.00.

Chairman Marshall: I think we will stop at this time until 1:30.

And thereupon a recess was taken until 1:30 o'clock P. M. of same day.

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[fol. 2924] And also WILLIAM F. SLOAN, called on behalf of The Ohio Bell Telephone Company, being first duly sworn, testified as follows:

Examined by Mr. Burr:

Q. Your name is William F. Sloan?

A. Yes, sir.

Q. What is your business, Mr. Sloan?

A. Consulting engineer.

Q. You qualified as a witness before this Commission in the so-called toll rate case, A. U. R. P. Number 124 on the dockets of the Commission, did you not?

A. Yes, sir.

Q. And you testified at that time with respect to the value of the toll property of the Ohio Bell Telephone Company?

A. Yes, sir.

Q. In that case, you related your experience, telephone and otherwise, up to the time of your testimony, did you not?

A. Yes, sir.

Q. The date of your testimony was March 4, 1924; in what work have you been engaged since that date?

A. Well, I have been almost continuously since that time in the practice of my profession, confining my work almost exclusively to the appraisal of telephone properties.

Mr. Burr: Will the Commission or counsel require any further qualification of Mr. Sloan?

Mr. McConnaughey: It is acceptable.

Commissioner Poor: That qualification can be included.

Commissioner Maullar: That previous qualification can [fol. 2925] be incorporated in this.

Mr. Burr: Well, his qualification in the toll case is a part of the record of this case. I hardly think it necessary to go back and go into that all again and with the consent of the Commission and the approval of the other side, I will not go into it any further.

The Witness: I might state, Mr. Burr, that since the date of that last appraisal I have done quite a considerable amount of work for banks and bond houses, for the merging of telephone properties and the issuance of securities. That is, the work since that date has not been confined entirely to appraisals for rate cases.

Q. Well, then, during the past two years, you have been engaged not only in the preparation of appraisals for utility rate cases, but also in the appraisal of utility properties in connection with mergers and with security issues.

A. Yes, sir, I have.

Q. Have all of those properties been telephone properties?

A. Yes, they have.

Q. Where were they located?

A. Well, practically all of them in the State of Illinois.

Q. Give the names of some of the companies?

A. Well, the Mississippi Valley Telephone Company, the Murphysboro Telephone Company, the Montgomery County Telephone Company, the Christian County Telephone Company, the Coles County Telephone Company, the Richland Telephone Company, the Baker Telephone Company, The Queen City Shelby County Telephone Company in the State of Illinois. These properties have been appraised and in [fol. 2926] most cases mergers have been effected and in practically all cases new security issues have been based on the merged property.

Q. All these companies which you have enumerated were so-called Bell Companies?

A. No, they were independent companies.

Q. In connection with your work during the past two years have you appraised any telephone properties outside of the State of Illinois?

A. Oh, yes, yes, indeed, I appraised property, many millions of properties in the States east of the Mississippi.

Q. In connection with those appraisals, have you testified before Public Utility Commissions?

A. Yes, sir.

Q. And from your connection with those cases, did you evaluate the reproduction cost new of the telephone properties under consideration?

A. Yes.

Q. And you also determined their present condition by personal inspection?

A. Yes, sir.

Q. What, if anything, have you done during the past two years in order to keep yourself informed as to telephone unit costs generally including cost of telephone labor and material in different parts of the states involved?

A. Well, each of the appraisals that I have been engaged on has necessitated the study of unit costs both of labor and material so that my studies constantly cover the changing prices of both labor and material.

Q. With respect to the State of Ohio, are you familiar with the telephone labor and material costs current in that [fol. 2927] State during the past few years?

A. Yes, I have been more or less familiar with the Ohio property since 1919. During the war I was engineering advisor for the Post Master General during the period of government control and was sent to Columbus for two or three weeks during the time of Federal control to write compensation contracts with the independent telephone companies in Ohio; and as soon as the lines were returned to the private owners I was employed to make an appraisal of the Columbus property. At that time, the Columubs property was owned by the Central Union Telephone Company. In 1922, I think, I appraised the Dayton Exchange property and then later appraised the toll property and for the past year have been engaged on the appraisal of the entire property in the State of Ohio.

Q. In those cases, did you also examine the properties in order to determine their per cent condition?

A. Yes, sir.

Q. In the so-called toll rate case, A. U. R. P. Number 124, you appraised all of the toll property of The Ohio Bell Telephone Company, did you not?

A. That is correct.

Q. Did you make a study of telephone costs including labor and material costs current in the State of Ohio at that time and for a few years previously?

A. Yes, sir.

Q. Isn't it a fact that for the last seven or eight years you have been studying telephone unit costs for the State of Ohio in connection with various cases?

A. Since 1919.

Q. Yes.

A. Practically seven years.

[fol. 2928] Q. In determining the per cent. condition of the toll property of the Ohio Bell Telephone Company two years ago, how many miles of toll pole lines did you inspect if you remember?

A. Well, as I recall about approximately 2000 miles of pole line.

Q. Yes.

A. I don't mean by that that I covered 2000 miles of road because many of the roads had two lines on them at that time and I saw about 2000 miles of toll line.

Q. Yes. Now, what percentage of the reproduction cost new of the toll pole lines of the company did you inspect at that time?

A. Well, approximately—well I should say 45 or 50 per cent of all that, of the total, of dollars involved in the toll property.

Q. Yes, that is what I mean. During the past twelve months in connection with the present cases, have you made any further inspection of toll pole lines of The Ohio Bell Company?

A. Do you mean in connection with this present case?

Q. Right?

A. Yes, I have spent several weeks on a personal inspection.

Q. Of the entire property of The Ohio Bell Company?

A. I have got the number of exchanges that I visited. I visited 78 exchanges, that is exchange areas in the State in which there were 120 central offices: that is some places, like Cleveland, had 14 or 15 offices, other cities like Canton I think had two or three, so that of the total points which I visited involved 120 switchboards and I presume that I saw [fol. 2929] 85 or 90 per cent. of the entire property of the company as far as dollars is concerned.

Q. Generally speaking what did the property show with respect to the expenditure of money on it, new money on it during the past four or five years?

A. Well, the inspection itself shows that a very large amount of money has been expended since I first became familiar with the property in 1919. There has been evidently vast sums of money expended. Later when I came to arrive at unit costs, I investigated the amount of money that had been expended in order to make a determination of unit costs, but it is obvious from an inspection of the property that a very large amount of money has been expended in the past four or five years.

Q. Generally speaking, what did you find the condition of the property to be in?

A. It is in excellent condition. The per cent. condition of the property has very materially increased since I first became familiar with it.

Q. You have been employed to make an appraisal of the property of the Ohio Bell Company as of what date?

A. I will just refresh my memory here.

(After an examination:) As of June 30, 1925:

Q. What inventory did you use for that purpose?

A. I made no effort to make an independent inventory of the property. The engineers of the company had prepared an inventory which I used in my appraisal. That inventory was supplied me by the engineers of the company. [fol. 2930] Q. That inventory was made as of what date?

A. Well, it was made as of the same date.

Q. In evaluating the property of the company as of June 30, 1925, what labor and material costs did you use?

A. Current as of the same date.

Q. By what method did you arrive at them?

A. Well, I might briefly describe the whole process and then take up in detail any particular items you may wish to discuss. As I stated a few minutes ago, the evidence from inspection is that a large amount of money has been expended on the property, so that one of the first things I did was to determine, by taking information from the auditor of the company, as to the amount of money that had been expended.

My reason for doing that was to determine whether a large enough amount of money had been expended in the past few years to serve as the base for determining labor costs: that is, if money had been spent incidentally and in small amounts it would not serve as the basis for wholesale construction; and I learned after investigation that approximately forty-eight millions had been expended on the property in the past four or five years.

That in itself is an indication that the construction program in that period of time has been of magnitude, which is on a wholesale basis, so that after making this determination I investigated the construction methods of the company in order to determine what the labor portion of the work would be. It is a comparatively easy matter to secure material prices as of any given date. I had no particular [fol. 2931] trouble in that respect. The prices of material

fluctuate from day to day, so that I took the material prices as of the date June 30th and then made quite an elaborate investigation of the records of the company for the labor performance.

I might point out at this time that in a telephone property such as this one construction goes on from day to day. It is done in two general ways. Some of it is done under what is called routine estimates, that is the daily work under a certain amount, we will say a thousand dollars, is done without a special work order or permit; it is just carried on from day to day. Now that it might be said would not represent wholesale construction.

They do another class of work which involves more than a thousand dollars—I am using that as an illustration: I think the actual amount is two thousand,—but whatever it is, any amount of work in excess of that particular specified sum is done under what is called a work order or a specific estimate. The plans are drawn up by the engineer and approved first by the chief engineer and then by other executive officers before the work is started so that the work records which I have studied pertain only to that wholesale part of it, that is the work done in larger amounts.

As a matter of fact, the actual records, the cost records which the company experiences, which is a combination of both specific and routine show costs considerably in excess of the units which I have used, but my theory of reproduc-
[fol. 2932] tion is that it should be done on a wholesale basis.

As a matter of fact, the property is not actually built that way. There are two theories about reproduction cost, one would be that an effort should be made to determine the cost of the property as it is built on a present-day-level; the other theory would be the cost of the property at present date prices in a wholesale manner.

I have taken this latter theory as my basis for the units which I have used.

Q. Did you make any comparison or check as between the units derives from an examination and analysis of the company's costs on the one hand and unit costs for telephone material and labor generally current in the State of Ohio on the other.

A. Well, I don't quite get that question, Mr. Burr.

Q. It is pretty long. Take it out and I will try it over.

Now, you have said that you have been generally familiar with the unit costs for telephone property including material and labor prices in the State of Ohio over a period of some years. In arriving at the unit costs used in your appraisal of the property of the Ohio Bell Company, did you rely solely upon the unit costs as developed from your examination of the company's records?

A. Oh, no, no, I did not.

Q. What else did you use?

A. Well, as far as material was concerned, I took the actual recent purchases and recent prices of material which of course were checked with the similar kinds of material [fol. 2933] which I had investigated in other places.

Q. Yes.

A. Now, as far as labor is concerned, I have stated that I considered the wholesale or the specific work order performance of the company in deriving my units for labor. I did not use that solely, however, as the base. I gave consideration to the performance for similar work which I had learned from experience with other companies, and I would like to point out that although I have considered only the specific or large-job records of the company, in no case except in the case of conduit do my units actually equal the performance of the company, even on their wholesale basis; and I simply used that as a guide to get any local conditions that might exist in Ohio. You cannot take any general set of unit costs and apply them indiscriminately, because local conditions will differ in every date.

Q. And even in different localities in the State, will they not?

A. Yes, that is true.

Q. Did you compile unit costs for all of the classes of telephone equipment and property exclusive of land and buildings in order to arrive at your appraisal?

A. Well, I made no determination of the cost of land or buildings or of the general accounts, which would include furniture and fixtures and motor vehicles and tools.

Q. Yes, I was coming to that next. But with those exceptions you did arrive at unit costs for all of the rest of the telephone property?

A. That is correct.

Q. That is the telephone property of The Ohio Bell Com- [fol. 2934] pany as of June 30, 1925.

A. That is correct.

Q. Having arrived at those unit costs, did you apply them to the property of the company as of June 30, 1925 as inventoried in Mr. Williams' so-called 1925 inventory?

A. Yes, sir, I did.

Q. Is the result of that application contained in an exhibit?

A. Yes, sir.

Q. Do you now refer to the exhibit consisting of 139 pages and which for the purposes of identification has been marked Sloan Exhibit A-1?

A. Yes, I have a copy of the performance.

And thereupon the exhibit so last above referred to is for the purposes of identification marked Sloan Exhibit A-1.

Q. And this exhibits represents your appraisal of the property of the company as of that date?

A. That is correct.

Mr. Burr: We offer Sloan A-1 in evidence.

And thereupon the exhibit so last above offered is introduced and admitted in evidence on behalf or The Ohio Bell Telephone Company and is herewith submitted marked Sloan Exhibit Number A-1 and made a part hereof.

Q. Considering first, Mr. Sloan, the page marked "Table of Contents", I assume that no explanation of that page is [fol. 2935] necessary. It speaks for itself, does it not?

A. Yes, I think so.

Q. It indicates the various pages where the different classes of plant shown in your summary sheet are itemized, does it not?

A. That is correct, it shows the pages on which the details may be found.

Q. Taking up the first item shown on Page Number 1 if you please, right of way, Account 207, cost of reproduction and cost less depreciation, $1,923,037.00, tell the Commission how you arrived at that amount?

A. Well, I might state that right of way is rather a difficult account to get exact cost upon for the reason that in a property which has been built as the Ohio property has been built, the recent construction in many cases is located on a right of way that has been acquired at some previous

time so that the expenditures for right of way in connection with any present program of construction are not always indicative of the true right of way costs. Now, of course, it is hardly necessary for me to state my understanding of the Ohio laws which provide that any utility company must seek permission of property owners before the placing of any structures in front of their property. That is generally known. Not only must this permission be obtained, but in many cases, payments are necessary to the property owners. That, however, is only one of the incidental items of the total cost of right of way.

It requires a considerable amount of time and expense for right of way agents to visit all property owners to [fol. 2936] secure the written permission to erect poles and where necessary to make payments to the property owners.

In the case of underground structures, like conduit and the installing of unde-ground cable, the permission must be obtained from the various municipal authorities, although in most cases, no direct payments are made for that; it is simply the time of the people who prepare the plans, take them to the City Hall, get the necessary permits, file them and record them and things of that kind.

Now, in the case of building cable, it is frequently—it is always necessary to get permission to erect cable on buildings and in some cases necessary to make payment for the same. So that in order to determine correct right of way costs, it is necessary to study those classes of plant which have been built in new locations rather than the general amount of construction, a large part of which is sometimes built on locations where right of way has been previously obtained.

Q. Isn't it true, Mr. Sloan, that even conduit right of way goes over private property in some cases?

A. Oh, yes, in cases where underground structures are built through private property it is frequent in those cases to obtain—it is always necessary to obtain permission and in some cases, it is necessary to make payments for easements and so forth.

A very diligent search of the records was made to determine costs on new locations, and reducing into a pole basis, although the costs are not entirely applicable to the pole [fol. 2937] line plant, it is found in general, the cost of right of way varies from five dollars to fifteen or twenty dollars a pole in new location.

A large amount of data has been collected to show that right of way costs are of that magnitude.

Well, from a consideration of all of the facts and in view of the fact that it is not entirely a question of pole line plant and of all sorts of outside plant, it is my judgment that about three per cent of the cost of the outside property is a fair and very conservative estimate of what it would cost to reproduce the present right of way of the company. If you will look on Page 2 of my report, you will see a rather simple calculation of the way in which this was derived. I have simply enumerated the items of outside plant and taken three per cent, which is shown on Page 2 of my report.

Q. Some of the right of way which the company has at this time, could not be reproduced at all, could it, in your judgment?

A. I presume that is true. I imagine there are certain localities where poles are now erected that the present owners would very strenuously object to having the new pole placed there.

Q. You say that the amount at which you have appraised the right of way, namely $1,923,037.00, is less than present right of way cost of the company on a per pole basis?

A. Yes, it is. I made some reduction there because of the fact that there are instances no doubt where many poles might be erected without any payments to property owners. [fol. 2938] On the other hand, we have numerous instances where it ran as high as fifteen and twenty dollars a pole. I think the amount that I have set out is a rather conservative estimate of what the present day right of way would cost.

Q. With respect to the next item shown on Page 1, namely that of land, how did you arrive at the amount shown in your appraisal by that item?

A. I accepted that amount. It was supplied me by the engineers of the company. It is my understanding that the figures for real estate were determined by a special board of appraisers and it was by people familiar with local conditions in each locality. I made no effort to determine the cost of the land. I simply accepted the company's figure on that item.

Q. How did you arrive at the third item, that of buildings?

A. In the same way.

Q. In the same way. By the way, let me ask you, in pass-

ing, whether the numbers shown at the left of page 1 are the I. C. C. account numbers?

A. Yes, that is correct.

Q. The next item is that of central office telephone equipment. How did you arrive at the cost of reproduction and the cost less depreciation of that item as shown in your appraisal?

A. Well, that—I presume we spent more time on that particular item than any other item of the plant. We had two men stationed, both in Columbus and in Cleveland—that is they changed from one location to another from time to time; that is the two men spent about nine months appraising in great detail the entire equipment of central [fol. 2939] office, the details of which have been supplied us by the engineers of the company.

Q. They gathered, as I understand it, under your direction, the data for the central office equipment throughout the State and then who appraised it?

A. Well, it was done under my direction by the application of present-day prices of that equipment, but the analysis of the various circuits which constitute each switchboard and the number of relays and the number of keys and the cords and the jacks that belong to each switchboard and grouped in each particular way in which they were grouped, was priced by these men during this period of nine months.

Q. And then what did you do with the results of their work?

A. Well, I was in constant touch with the work and with the selection of the unit costs that were applied. I made constant use of the latest price lists of the Western Electric Company as of this date, in case of those boards which are Western Electric Boards. In the case of Stromberg and Kellogg Boards, we priced them with the corresponding price of those companies, so that——

Q. What then does the amount $17,056,538.00 represent?

A. It represents the actual cost of labor and material required to install the central office equipment in the State of Ohio, toll line exchange.

Q. As of what date?

A. June 30, 1925.

Q. Do you mean by that the cost to reproduce that property as of that date?

A. Correct, in a wholesale manner. I might add that the [fol. 2940] pricing of central office equipment is perhaps one of the most complex parts of a whole appraisal. There are so many varied circuits and different kinds of equipment on each switchboard that it was necessary to practically analyze each circuit on each board in order to properly determine its price. That in fact accounts for the large amount of time that we put on this part of the work.

Q. How did you arrive at the appraised amount shown for the item other equipment of central offices, 222, $647,518.

A. That item is an item which covers switchboard furniture, that is at each switchboard there is a certain amount of incidental furniture such as operators chairs, the linoleum on the operating floors and various rockers and kitchen equipment; that is most of the offices have cafeterias for the girls.

It includes all the kitchen equipment, the rest room furniture, the rockers and linoleum, the chairs, the school equipment and various items of that kind which are of the general nature of those items contained in Account 261, office furniture and fixtures. I accepted the company's figure on that item because it was an item that if priced independently would have required a tremendous amount of time for more or less small items of furniture and fixtures. Of course I investigated in a general way the procedure of the company in arriving at its costs and verified a few of them and we know that the costs are very conservative.

I might add—there is no labor involved in this account. [fol. 2941] It is practically all a material item, in much the same way as furniture and fixtures. There is no particular labor involved in the installation of it; it is simply the price of the material.

Mr. McConnaughey: Your total is $15,000.00 higher isn't it?

The Witness: Well, I think you will find that same discrepancy in both—in that account, Mr. McConnaughey, and also in accounts 261 to 270. The reason for that as I understand it is that the company's figure was as of an earlier date to which they later made some supplemental additions in the way of statements—in the way of additions—and we have put the additions right into the account. I think that is the explanation of that difference. I think you

will find similar differences on all of those accounts at the bottom of the page there.

Mr. Burr: In the Williams' inventory, Mr. McConnaughey, their equipment of central offices, the general equipment items were inventoried as of October 1st, 1924.

Mr. McConnaughey: Yes, I remember.

Mr. Burr: And after that the net additions to those items from October 1st, 1924 to June 30th, 1925 were added and were separately appraised by Mr. Williams and I understood Mr. Sloan to say now those were included in these figures that he is giving now.

The Witness: Yes, sir.

Mr. McConnaughey: Mr. Williams left them out.

Mr. Williams: No, there were net additions $167,000.00 [fol. 2942] at the bottom of the summary sheet and now he has distributed those through the accounts.

The Witness: I think the difference of $167,000.00 in Mr. Williams' figures will give you the figure very close to the one that I have given you.

Q. What course did you pursue in appraising the station apparatus, account 231?

A. We took—I might state here that the account 231 is almost exclusively an item of material. There is no labor involved in that except I think five cents per telephone for the attachment of the receiver and transmitter; otherwise it is simply a group of material. It is comparatively easy to take each type of telephone and put the present day prices for material against that, which we did. If you care to, I can take up a number of different types of telephone and show the way in which each type is priced.

Q. I wish you would take up one or two as typical?

A. If you will refer to Page 42 of my report you will find the detail of the account shown on Page 1. One of the largest items there is manual common battery apparatus for city use. That is $9.156. Now, the details of that item are—after an analysis of the records of the company—we found that of that class of phones—well we analyzed about 95,000 phones and found that about 92,501 were of the desk type and 3,154 were of the wall type. The analysis of the wall type would be one 534-A subset at $4.10, one 20-AL desk stand at $2.75, 147 A backboard was put in, one board, we assumed that a fourth of them had those back boards [fol. 2943] at 30 cents, would be 8 cents; Number 450 combination cord, $1.05 and the 5 cent item of attaching trans-

mitter and receiver, $8.03, supply express 46 cents, total $8.49.

The corresponding item for the wall type was one 533A subset at $5.55, one 92 cord at 24 cents, one-fourth of a backboard 8 cents; 5 cents for the attachment; supply express 34 cents, total $6.24.

Then the combined average of those two, weighted in the proportions which I outlined is $8.416, to which was added 74 cents of the miscellaneous material giving a total of $9.156.

That is the way in which each type of instrument is analyzed to arrive at the unit costs used in the appraisal.

Q. You followed that method did you in appraising the station apparatus of the company generally?

A. Yes, right through in all of the other types.

Q. And what in your judgment is the cost to reproduce that part of the company's property as of June 30, 1925?

A. Well, it is the amount shown; it is simply an item of material of $5,933,277.00.

Q. That represents your judgment of the cost to reproduce that property as of that date?

A. Yes, that is correct.

Q. How did you appraise the item of station installations, account Number 232?

A. Well, that was taken from actual construction records. Let me see, the details of that item are shown on Page 43.

Q. Yes.

A. $4.24. Now, I took the total installations for the years [fol. 2944] 1922, 1923 and 1924, there was a total of 212,583 telephones installed. By that I mean telephones installed on new premises where there was no previous wiring. The total material cost—Well, I am not correct in the statement, those entire figures were considered, but finally the figures for the last six months in 1925 were considered. The total material was $34,615.00; supply expense $1,973.00; the labor $104,786.00; superintendence $23,053.00; miscellaneous items, $415.00; stable and garage, $10,300.00; there were 41,303 installations which averages $4.24 per instrument.

Q. The unit cost in that case, of $4.24, was arrived at by the study which you have heretofore referred to?

A. Yes, sir. I started to give you the figures for the three years, 1922 to 1924 inclusive, as the costs.

The actual cost for that three year period was $5.59. The figures for the years 1923 and 1924 alone were $5.41, but after making certain adjustments of supply expense and supervision and considering the six months' period prior to June 30, the figure is $4.24.

Q. That represents your judgment then of the cost to reproduce that part of the company's property as of that date, namely, $2,211,783.00?

A. Yes. It is based on the actual records.

Q. The next item is that of interior block wires, Account 233. This is also referred to on Page 43 of your exhibit is it not?

A. Yes. That is a rather small item. We found the rec- [fol. 2945] ords of 1,086 installations. The material was $1,563.00; the supply expense $89.00; labor, $2,532.00; supervision, $557.00; stable and garage, $296.00; and miscellaneous items, $66.00, giving a total of $5,103.00, or $4.70 per installation.

Mr. McConnaughey: The supply of supervision, is that on a percentage basis?

The Witness: Yes.

Mr. Burr: Will you read that last answer?

(Previous answer read.)

The Witness: That is considerably below actual records of the company.

Mr. Burr: I am afraid that in asking you to repeat your answer I interrupted the answer that you were making to Mr. McConnaughey; if so I am sorry.

The Witness: No, Mr. McConnaughey asked me about the supply expense.

Mr. Burr: Well, proceed and answer his question as to expense.

Mr. McConnaughey: Are those figures that you gave there the percentage figure or the actual figure taken off the records.

The Witness: No, they are below the actual figures. We adjusted both of those expenses and in the cost of installations we adjusted supervision and supply expense to the amount that we considered fair for this appraisal, and it is somewhat below the actual experience of the company.

Mr. McConnaughey: Why did you consider such an adjustment necessary?

[fol. 2946] The Witness: Well, in the case of supply expense certain charges which the company carry on their book as supply expense, we had taken care of in the way of freight. That is their figures contained certain items for undistributed freight and packing. That is material will be shipped to a central point and then any shipments from there out to outlying points are carried in supply expense, and we have taken in our appraisal in our material units, have taken the freight, the entire freight in the material itself, so we deducted that freight and cartage out of the supply figures and which corresponded——

Mr. McConnaughey: What was the percentage that you finally used on those items?

The Witness: 5.7 per cent.

Mr. McConnaughey: On what?

The Witness: Supply per cent.

Mr. McConnaughey: On supply expense, what for supervision?

The Witness: 22 per cent.; I can give you the analysis of those figures if you wish them.

Mr. McConnaughey: I wish you would.

The Witness: The total material disbursed was—this was for the year 1924—the total material disbursed was $5,172,000.00 and there were discounts which should be subtracted from that amounting to $14,160.00, so that the net amount of material disbursed was $5,157,840.00.

Mr. McConnaughey: Now, is that for all the construction for all wires that year?

[fol. 2947] The Witness: Well, that is the total amount of material purchased.

Mr. McConnaughey: You are not confining it to station installations?

The Witness: No, that same percentage is used throughout.

Mr. McConnaughey: All the way through?

The Witness: Well, now, the salaries and wages involved in handling the material was $173,634.00; the supply adjustment, we reduced by one-half, $60,091.00. Now, the supply adjustment as of—By the way, I made an error in my statement about that undistributed freight and cartage.

Mr. McConnaughey: Mr. Hagenah suggests that you give

us a memorandum of that and as far as this testimony is concerned——

The Witness: Well, there are only three items. I can give it to you. The salaries and wages, $173,634.00; the supply adjustment was $60,091.00, and I made an error in my statement about freight and cartage, that undistributed freight and cartage has been included here and it has not been included in the units of $59,654.00, so dividing that total of $293,379.00 by the material disbursed, $5,157,840.00, we arrive at 5.7 per cent.

Mr. McConnaughey: You have separated new construction from maintenance there.

The Witness: No, no, that is just—that is simply a study of the total amount of material handled.

[fol. 2948] Mr. McConnaughey: I see.

The Witness: Regardless of the purpose for which it was.——

Mr. McConnaughey: How did you get the 22 per cent supervision?

The Witness: We considered the records for the entire year of 1924 and 1925. The—really this is quite complicated because it is two years and only part of the figures have been totaled here. I can't——

Mr. McConnaughey: Well, if you prefer, if you will give us a memorandum of it.

The Witness: I can give you a memorandum or I can read it here individually to you and then they can be combined, whichever you prefer. Perhaps I might read one year and then give you — written statement of the two years combined.

Mr. McConnaughey: All right, suppose you do that.

The Witness: For instance—well, the figure that I have here is for six months in 1925. I will read that.

The total gross additions were $5,893,278.00, in six months; from that was deducted certain overhead deductions amounting to $617,083.00; leaving a net of $5,276,-195.

New plant supervision carried in Account 706-01 amounted to $103,731.00; tool expense under Account 703 amounted to $64,119.00. From that amount was deducted five per cent for engineering. That is the company carries their engineering right in this same account so we took [fol. 2949] five per cent of those gross additions from that

and the residue was put into supervision. So, deducting five per cent of the——

Mr. McConnaughey: It will be just as well if you will just file memorandum.

The Witness: Well, I think I better because these are somewhat complicated.

Mr. McConnaughey: I thought you could do it easily.

The Witness: It is rather involved here. The figure finally arrived at for that 6 months' period was 25.53 per cent, but the combination of the two years, 1924 and 1925 together came out 22.11 and we used 22 even on them.

Mr. McConnaughey: If you will just furnish us the memorandum on that.

The Witness: All right, we will do that.

Q. Mr. Sloan, the $85,704.00 shown for the item of interior block wires in your appraisal represents what?

A. Well, that in my opinion is the cost of reproducing the interior block wire that the company has, at present day prices.

Q. That is as of June 30, 1925?

A. Yes, when I say present day prices, I mean as of the date of this appraisal.

Q. How did you arrive at the amount shown for private branch exchanges, account Number 234, $3,206,500.00?

A. Well, the details of that are shown beginning with Page 44 and continuing through to near the bottom of Page [fol. 2950] 52. The details of the various types of boards are given there. The procedure was almost identical with that adopted in the case of the appraisal of central office equipment. A very careful study was made of the various kinds of circuits and equipment that are installed on each type of board and the prices as of June 30, 1925. That involved a very careful study of the circuits and the equipment and the cord and the line and relays and various other types of equipment that are installed on each type of switchboard.

Q. With respect to all of these items which you referred to as having been priced in one way or another do you mean by that that to those various classes of plant there were applied the unit costs as of June 30, 1925, as worked out by you in accordance with your previous answers?

A. Yes, that is true.

Mr. Burr: It will save some time to cover the question in that way.

The Witness: This entire study was independently made. We determined our unit prices and analyzed innumerable circuits and diagrams and everything else connected with the appraisal of the board, provided our own units—or our own material prices and our own labor prices and arrived at the figures which are shown here.

Q. That is to say, $3,206,500.00 for private branch exchanges?

A. Yes, if that is the amount (After examination); yes, that is correct.

Q. That amount represents what?

A. That amount represents the reproductive cost of the [fol. 2951] private branch exchange equipment of the company as of June 30, 1925.

Q. How did you arrive at the amount shown for booths and special fittings, Account Number 235, $166,236.00?

A. As a matter of fact, the method employed on each account was very much the same. We determined the various types of booths and arrived at a composite unit cost for the various types of booths and applied independent prices for labor and material. I notice the item is $118.91. That offhand appears to me as a very conservative amount because almost all the modern type booths with the glass door run nearly that much for material alone.

Q. On what page are booths and special fittings shown in the detail of the appraisal?

A. At the bottom of Page 52 there is just one item for the composite for the various types of booths.

Q. And $118.91 to which you have just referred is the unit price is it not?

A. Yes, installed.

Q. Now, what then in your judgment was the reproduction cost new of the booths and special fittings of the company as of June 30, 1925?

A. $166,236.00.

Q. Explain the item of exchange pole lines, account 241, $11,613,949.00, stating among other things where the detail of it is to be found, and how you arrived at that amount for the total?

A. The detail is shown on Page 53. Now, the price as set

out there, as indicated on the bottom of Page 53 by a note, include- not only the price of a pole, but the anchors and guys and all the miscellaneous material that would be found in a telephone property and offhand, the price might [fol. 2952] look somewhat high as compared with the price of poles alone, but it should be considered that they contain not only the pole itself, but all of the miscellaneous items in pole line construction with the exception of the cross-arms. The material was obtained current as of June 30, 1925. The labor was obtained from the analysis of several thousand poles done on a wholesale basis as indicated previously.

The supply expense of 5.7 per cent was used and supervision of 22 per cent.

Q. In other words, you took the company's experience plus your own judgment as to the unit prices to be used for this item?

A. Yes, and I want to point out, too, that in the cost of poles, the units as given here fall considerably short of the actual performance during the past four years.

Q. Whose actual performance?

A. The company's.

Q. What then in your judgment is the reproduction cost new of the exchange pole lines of the company as of June 30, 1925?

A. $11,613,949.00.

Q. Do the units which you have used for exchange poles include the cost of cartage and freight?

A. Yes, sir, that is, they contain that cartage and freight to a central point.

Q. Yes.

A. In answer to Mr. McConnaughey's question a few minutes ago, I stated that that freight had been included to the point of erection, but that is not true. The only freight and cartage included in any of the appraisal units them- [fol. 2953] selves is the—that figure of freight shipped to Columbus. Now, some of it would go beyond and some one side or the other, but Columbus we took as the central shipping point and then let this item of $60,000.00 which I mentioned in the analysis of supply expense take care of the incidental shipments to other points.

Q. The unit costs which you have used in the case of exchange poles includes not only the freight and cartage of

the pole itself, but also of the miscellaneous items associated with it—do they not?

A. Yes, to the central point.

Q. Yes?

A. But not including the miscellaneous shipments from that out to the point of use—well, they do—they include that, too, after the application of the supply expense, so that the entire freight and cartage is included in the unit.

Q. Yes. Now, the unit then that you have used includes not only the freight, cartage, labor, material, with the supervision, tool expense for the main item, that is for pole, but for the associated items that go with it?

A. That is correct.

Q. In the case of exchange aerial cable, how did you arrive at the amount shown in your appraisal for that item?

A. Beginning with Page 54 and extending through to Page 59, the details of the aerial cable account are shown. The procedure in arriving at the units was identical with that of other classes of plant. The cost of cable as of June 30 was obtained and an analysis of several hundred [fol. 2954] thousand feet of cable was used as one of the bases for arriving at the labor cost. I might state at this point that the average labor rate of the company as of that time was used, about—it was approximately 80 cents an hour.

Commissioner Maullar: Mr. Sloan, are these units based on Western Electric Price?

The Witness: Yes, yes, on Western Electric prices to Associated Companies, not to other companies not associated with the Bell System.

Q. Which set of prices are the lower of the two?

A. Oh, the prices—the Western Electric Company has two prices, those which it sells to the Associated Companies and those that it sells to the general trade.

On the equipment and cable in general, the prices as to the Associated Companies are from 18 to 28 per cent below the prices to the general trade.

Q. And in all cases with respect to all classes of equipment, the Western Electric prices to the Associated Company is lower than that to the General Trade is it not?

A. Well, there might be a few instances where that is not true,—well, I think that statement is true. There are some

instances of equipment that the Western Company does not sell to non-associated companies.

Q. Yes.

A. But in those cases where it is sold to either one, I think the statement is true.

Q. That is to say in cases where it is sold to both Associated Companies and the general trade, the Western Electric prices to the Associated Company are lower than those [fol. 2955] to the general trade?

A. Yes, in general that is true.

Now, there are certain situations of this kind, however, where the commercial article is of a lower grade than that demanded by Bell specifications. In that event, there is not much difference.

As a matter of fact, the higher grade specification article which is sold to the Associated Companies in general is sold at about the price than the lower grade is sold commercially, but with that exception, I think your statement is correct, that the prices to the Associated Companies are considerably lower than the commercial prices.

Q. Now, the amount, $9,185,972.00 for exchange aerial cable as shown in your appraisal, represents what?

A. Well, that is my best judgment based on actual material costs and based on a study of the actual labor costs as to the minimum figure at which the present aerial cable plant of the company could be reproduced for.

Q. As of June 30, 1925?

A. Yes, sir, and in this cost as in the other cost, the labor units as used are somewhat lower than the actual performance of the company.

Q. Do the unit costs which you have used in appraising the exchange aerial cable of the company take into consideration and include such associated items as splices, rings, messengers and bonds and the like?

A. Yes, sir. If you will look at page 59 of my report, you will find a note at the bottom of the page, "messenger", that is the steel wire that supports the cable—"pole seats" [fol. 2956] and numerous miscellaneous items which do not include splicing, "are included in above unit costs."

Q. Now, how did you arrive at the amount shown for exchange aerial wire, Account 243?

A. The details of that are shown on Page 60, beginning on Page 60—well, the whole account is shown on Page 60.

Q. That is Page 60 of your appraisal?

A. Yes.

Q. Sloan Exhibit A-1?

A. The statement of the mileage of each particular kind of wire is set out on Page 60 and to those items have been applied proper unit prices for labor and material.

Now, in the cost of wire, I departed somewhat from the usual practice of determining material costs among other classes of plant. It is comparatively easy to arrive at the cost of material from current price lists or from recent purchases, but in the cost of copper wire, the practice of the company is to make a budget of their copper requirements for a certain period of time and then that price, that particular contract will prevail until that supply of copper is used up, so that the record of purchase of that date don't necessarily indicate the proper price of wire at that particular date. So what I did was to arrive at the cost of wire based on the ingot price of copper as of the week ending June 30th or as a matter of fact, I think I took the average price of ingot copper for one week preceding and one week following June 30.

Q. June 30, 1925?

A. Yes, and using that base material price, calculated the price of copper wire as of any particular size on that [fol. 2957] base.

Q. The amount $5,031,068.00 as shown opposite that item, that is to say the item of exchange aerial wire, in your appraisal, represents what?

A. It represents the results of my study and analysis and best judgment of the cost in reproducing that class of property as of June 30, 1925.

Q. Will you discuss the next item of exchange underground conduit, $13,193,068.00?

A. The actual records of the company for the past three years were studied in connection with the actual cost of installing underground conduit. That study indicated, however, that the recent additions to the conduit plant were in the case of large cities like Cleveland, in the outlying districts. That is the structures in the downtown section have been completed a number of years ago and records of construction of the company in heavy traffic areas in metropolitan centers did not disclose what in my opinion would be proper costs for that sort of construction.

Q. That is for that sort of construction generally, you mean?

A. Yes.

Q. All right, go ahead?

A. Take the downtown area of any large cities like Cleveland or Chicago or Akron or any place where there is heavy traffic and where in the course of years the entire subsurface of the street has become filled with pipes and other structures, it is obvious that the present day cost of installing structures in that sort of a situation are much greater than when the structures which are there now were [fol. 2958] actually installed, so that I divided the conduit in the three areas. I took the present day increase as representing normal construction in more or less residential and outlying districts of large cities and then I made several studies of heavy construction costs in heavy traffic areas in large cities.

I have just completed a very elaborate study of the cost of building underground conduit in the City of Boston. In that case we had a very considerable amount of heavy construction in Metropolitan Boston and it was startling, the difference in construction costs in the center of large cities found in that way as compared to the costs in outlying sections.

So that I made a special study of the conditions for the downtown areas in Cleveland and added an additional factor on my unit costs for that type of construction; and then I made a third study to determine the sort of a medium area that is not the most congested area of the city but lies between the residential area and the heavy traffic area of large cities and considered three factors of that type in finally arriving at the unit costs which I finally employed.

Mr. McConnaughey: What was the factor that you used? What did you add to that?

The Witness: Well, I don't know what it will be in percentage. I took 20 per cent as I recall it of this heavy type construction in downtown areas that would not be represented by present day construction methods, and what were [fol. 2959] those percentages? (Consulting assistant)

I took 20 per cent in heavily congested traffic areas and then 30 per cent in business area- under normal city traffic conditions and the residential and suburban areas I took at 50 per cent, so I weighted my units in those proportions.

Mr. McConnaughey: What did you add for that extra heavy construction?

The Witness: Well, I don't—I can give you the units for each type. That would be the best way, I guess. I didn't do it in percentage. I took so many, a certain part of one unit, and 20 per cent of one unit, 30 per cent of another and 50 per cent of a third.

Mr. McConnaughey: Yes, will you give us those?

The Witness: I will have to take it for some certain, specific set of the conduit—that is six duct or ten duct—well, I didn't state that properly. I took 3 cents of units and weighted them in that way——

Mr. McConnaughey: Just let it go.

The Witness: I can supply you with the three sets of units.

Mr. Hagenah: You said you applied that——

The Witness: What I did was actually to apply three sets of units and weight them in those proportions.

I think that briefly covers that subject, Mr. Burr, unless you want further details.

Q. What in your judgment was the cost of reproduction or is the cost of the exchange unde-ground conduit as of [fol. 2960] June 30, 1925.

A. Well, the entire conduit details are shown from Pages 61 to 91 inclusive. The amount shown at the bottom,—near the middle of Page 91—is $13,193,068.00.

Q. And it represents what?

A. That represents to my mind the minimum cost of reproducing the present underground structures of the company.

Q. And as of what date?

A. As of June 30, 1925.

Q. By that you mean the exchange underground conduit of the company as of that date?

A. Yes, it is exchange; there is no toll included in it.

Chairman Marshall: We will take a ten minute recess here.

(Here a short recess was taken.)

Chairman Marshall: You may proceed.

Q. How did you arrive at the amount shown for exchange underground cable, Account 245, $11,931,091.00?

A. Oh, this is a new account?

Q. Yes.

A. Account 245?

Q. Yes.

A. The details of that are shown beginning with Page 245——

Q. Wait a moment, not 245?

A. Account 245 begins on Page 92 and extends through to Page 107. The material prices for cable were determined in exactly the same way they were determined for aerial cable. The labor was arrived at after an analysis of several thousand feet of actual underground construction.

Q. Construction by what company?

[fol. 2961] A. By The Ohio Bell Company, in the past two years—three years. The construction records which disclose the hours of time actually required for the work together with the average hourly wage rate were used in arriving at this unit as set out in my report.

Q. And what does the amount, $11,931,091.00 represent?

A. It represents my opinion of the cost of reproduction of the exchange underground cable plant of The Ohio Bell Telephone Company.

Q. As of June 30, 1925?

A. As of June 30, 1925.

Q. The next item is a small one, that of exchange submarine cable, account 246, $9,543.00?

A. In this particular account, I didn't find many records of construction in Ohio of submarine cable. I determine the price of material in the usual manner, but I was somewhat at a loss to find adequate records showing the cost of construction of submarine cable, but I did have in my files a rather complete set of cost data obtained in connection with the erection of a very considerable amount of submarine cable across Chesapeake Bay in Maryland and across the Bays in Boston and some of the Bays in Maine.

The New England Company and the Maryland Company have quite a large amount of submarine cable. I had analysed those costs during the past year and I have simply used that data as representing average costs for installing submarine cable; but I would like to point out that submarine cable can cost almost anything. It is just a question of the conditions that you meet at the time that you [fol. 2962] are installing the cable. You may have a very deep body of water to sink your cable in; you may have a considerable amount of dredging to do; you may have to employ tug boats and special crews of men to install the

cable; or you may find very easy conditions like sinking a piece of cable across underneath a draw bridge, so that these costs that I have used for submarine cable represent rather average conditions across Chesapeake Bay and across the Bay at Portland, Maine,—some of the Bays in the Coast of Maine.

I think they are minimum costs. It could very easily happen that the costs might be twice that; submarine cable is a very uncertain thing in estimating.

Q. The amount of $9,543.00 represents your judgment as a proper amount necessary to reproduce that item as of June 30, 1925?

A. I think it is a minimum amount. I would be inclined to say that it might cost considerably more than that. It is just based on the best data I had and based on cable installed in rather shallow water, in considerable lengths.

Now, as I said before, it might cost twice or three times that much very easily.

Q. How was the amount of $7,867,303.00 as shown for toll pole lines, Account 251, arrived at?

A. The same kinds of data was used in arriving at the toll poles as were used in arriving at exchange poles—that is, the price of material is the same in both cases, but the labor was determined from an analysis of toll estimates [fol. 2963] that is worked down under toll conditions rather than under exchange conditions.

Q. Worked down by whom?

A. By the Ohio Bell Company.

Q. During what period?

A. From 1921 to 1923, inclusive.

Q. And what does that amount $7,867,303.00 represent?

A. It represents my best judgment of the cost of reproducing the toll pole lines as of June 30, 1923.

Q. The detail of your appraisal of the toll pole lines is shown on what pages?

A. Page 108.

Q. Proceed if you will to discuss the next item, that of toll aerial cable, account 252?

A. Toll aerial cable is shown on Pages 109 to 114 inclusive.

The method of arriving at the units was identical with that used in arriving at the units for exchange cable with the exception that we considered the cost of toll estimates

rather than exchange estimates in arriving at our labor units.

The most of the toll cable, or a large part of it is cable that is known as composite cable, which consists of not only the twisted pairs, but the so-called quadded cable which is used for phantom circuits. Now, the installing labor on cable of that type is very materially in excess of the cost of putting up ordinary exchange cable, by reason of the very careful testing that must be required in splicing a quadded cable; so that the labor units are considerably higher for composite cable than they are for straight exchange cable due to this extra testing that is necessary in [fol. 2964] the erection of that kind of cable.

Q. What does the amount of $611,034.00 shown for toll aerial cable represent?

A. It represents my judgment regarding the cost of reproduction of this part of the plant as of June 30, 1925.

Mr. McConnaughey: Mr. Burr, may I ask a question there?

Mr. Burr: Yes.

Mr. McConnaughey: What is the explanation of the odd number of pairs in this cable?

The Witness: On what page, Mr. McConnaughey?

Mr. McConnaughey: On Page 110, 26 of the 19 gauge—there isn't any such as 26 pair cable, is there?

The Witness: Yes, every cable has one spare pair; 25 pair has one spare pair for bad pairs; 50 pair has one spare pair. One hundred has also one pair, but from there, it is one per cent extra; that is 200 pair would have two pairs; four hundred pair would have four pairs.

Q. What is your judgment as to the cost of reproduction of the toll aerial wire of The Ohio Bell Company as of June 30, 1925?

A. The details of that account——

Q. Just a moment, just read the question.

(Previous question read.)

A. $4,102,524.00.

Q. Where is your detail of that amount shown?

A. The detail of that amount is shown on Page 115.

Q. How did you arrive at the amount?

A. In the same way as for exchange aerial wire. The

copper base for the wire itself was obtained in identically [fol. 2965] the same way and the labor was obtained from an analysis of toll wire construction costs.

Q. What in your judgment is the reproduction cost new of t[illegible] toll underground conduit of The Ohio Bell Company as of June 30, 1925?

A. $49,[illegible].00 shown on Page 116.

Q. How did you arrive at that amount?

A. In the same way as of exchange cable as already described except that I did not use those heavy weighting factors for construction in congested areas that I did for exchange. Otherwise the procedure was the same.

Q. What in your judgment is the cost of reproduction as of June 30, 1925 of the toll underground cable of the Ohio Bell Company?

A. $499,781.00. The details are shown on Pages 117 to 127 inclusive. These units were arrived at in the same way as for exchange underground cable with the exception that consideration was given to the extra testing costs that would be necessary in connection with quadded cables.

Q. Does the discussion of exchange submarine cable covered by your previous answers apply equally to toll submarine cable?

A. Yes.

Q. Shown in your appraisal at $6,561.00?

A. Yes, with the same statement that the cost might be twice that much without departing from the facts. I will confess that I didn't have enough data in connection with study of Ohio conditions to base it on the actual conditions, so I used general information on that subject.

[fol. 2966] Q. Then I understand $6,561.00 shown in the appraisal is the cost of reproduction of that class of the company's property presents the minimum cost of reproduction as of June 30, 1925?

A. Yes, in my opinion, it is a very conservative amount for that.

Q. What in your judgment is the cost of reproduction of the office furniture and fixtures of The Ohio Bell Company as of June 30, 1925.

A. Well, these accounts, office furniture and fixtures, general store equipment, general stable and garage equipment, general tools and miscellaneous construction expenditures are figures which I have accepted as supplied me by the

engineer of the company and represent what I believe to be conservative costs for the material contained in those accounts. None of the accounts contain labor. They are simply an inventory of numerous large and small items of plant which I have accepted. No estimates were necessary as to the labor involved.

Q. I understand you to say that where you say that your labor costs have been based upon or derived from the experience of the company, that you have taken the actual experience of the company and then in arriving at the unit costs to be used in your appraisal, you have also taken into consideration your general knowledge of unit costs, particularly labor costs as apply in the State of Ohio?

A. Yes, not only in the state of Ohio, but the general gang formations and time required for doing work of that kind. I, in the past three years have analyzed the cost of many millions of feet of cable and the costs of many thousands of [fol. 2967] poles and the units that I have used have all been based on the actual performance. They are not estimated from any theoretical time, but based on an experience in a large number of instances; with the exception of conduit, the units that I have used are actually below this company's experience in the past three or four years.

Q. The next item is that of omissions, two per cent. Will you first tell the Commission on what amount the two per cent is computed and why you have used two per cent for omissions; also what is or are intended to be covered by the item of omissions as used in your appraisal?

A. Well, it is generally recognised that and it has been my experience proven by many tests that regardless of the care with which an inventory is made, there are bound to be certain omissions, and based on my judgment of about 18 years of experience, that omissions almost invariably occur in the preparation of any inventory of property. I regard it as a very conservative amount and it is almost universally admitted by engineers in general that some allowance should be made for omissions.

They do not always agree on the exact amount, but the range as I have observed—that has been used by different engineers—varies from one and a half to three per cent. I regard two per cent as a very conservative amount.

Q. On what is the two per cent computed?

A. It is computed on the entire property.

Q. That is on the entire physical plant?

[fol. 2968] A. That is two hundred and——

Q. (Continuing.) Appraised above the item of omissions in your appraisal?

A. Yes, two per cent of the sum of items two hundred seven to two hundred seventy, inclusive.

Q. And the $2,176,873.00 represents what?

A. Represents my opinion of a very conservative and reasonable allowance for omissions that have probably been made in the preparation of the inventory as submitted in the report.

Sometimes in the preparation of inventories, engineers have allowed in connection with omissions, an item for contingencies, but I have not done that in this case because of the fact that I base my units on actual performance. Well, now, as a matter of fact, except in the case of conduit, my units actually fall below the experience of the company.

Now, I don't mean by that that any other allowance should be made for contingencies, because the units that I have used are in my opinion adequate for doing this work in a wholesale manner, so that I have not tried to make any other allowance than the omission of two per cent as shown on the report.

Q. Up to that point, the cost of reproduction of the property of The Ohio Bell Company as of June 30, 1925 in your judgment is what?

A. $111,020,515.00.

Q. We now come to what are sometimes referred to as the undistributed construction expenditures. Will you please take them up in their order and tell the Commission how [fol. 2969] you have arrived at the amounts shown for those costs in your appraisal?

A. Well, I might discount engineering first although it appears second in the list.

Q. Very well.

A. Engineering was determined from—that is the actual expenditures of the company for supervision and engineering combined were analyzed. I attempted to read an analysis of those expenditures into the record, but have agreed to supply a written statement of how that money was disposed of. A certain amount of it, which I have taken arbitrarily at five per cent of the gross construction was deducted from the total expenditures for engineering and supervision com-

bined. The five per cent as shown here and the balance of the construction which has actually been expended in construction of the property is contained in the units above the line so that the engineering is simply a study of the company's actual performance.

Q. Well, what did you find as a result of that study?

A. Well, I just found a certain amount expended for engineering and supervision combined, which I arbitrarily apportioned by per cent to engineering and the remainder to supervision.

Q. Well, did the amount which you found equal the sum of these two, the amount which you apportioned and the amount which you are calling five per cent?

A. Yes, it is simply a separation of the two amounts. That was based on several million dollars of gross construction so that the gross percentages were determined accurately [fol. 2970] from that gross construction.

Now, in the case of general, administrative and legal expense, a study was made of what proportion of the present administrative and legal force of the company would be required during the construction period. It was determined from a study of this kind, that about two per cent of the gross construction would represent a normal (General, administrative and legal expense) amount chargeable to construction during a reproduction period.

Q. The amount, the proper amount for general, administrative and legal expense?

A. Is $2,220,410.00.

Q. And it represents what?

A. It represents my best judgment of the proper allowance for costs of that kind during a reproduction period of this property.

Q. The two per cent is computed on what?

A. $111,020,515.00.

Q. In the case of engineering, the 5 per cent is computed on what?

A. On the same amount.

Q. What is represented by the item of casualty, liability and fire insurance, one per cent and by what method did you arrive at one per cent for that item or for those items taken together?

A. I first determined the insurance rates that would be

charged if the company took the same insurance to protect its payroll. They did not do that, however, but chose to protect their workmen by the operation of their so-called Benefit Plan. So I took the withdrawals from that fund during the past two years, wasn't it? 1924 and '5 I think. And determined what percentage the withdrawals of that [fol. 2971] fund bore to the payroll and determined the relation of the withdrawals from the fund to the payroll.

That to my mind is the minimum amount that could properly be chargeable to this account. As a matter of fact in the reproduction theory, there would be no Benefit Plan to make withdrawals from, so I have assumed that 15 per cent of the payroll would be carried at the same rates as paid to the State Commission and the remainder on the basis of the actual withdrawals from their fund.

To do that, it involved the necessity of dividing the plant between material and labor. We determined that about 30 per cent as I recall of the total plant included in this appraisal is straight labor. That means, of course, such charges as trucking and miscellaneous incidental charges and supervision would not be insurable; it is just the straight wages that would be protected by this calculation. While the actual calculation actually came out 1.003 per cent, simply rounded it off to one per cent. As a matter of fact, it would be three-one-thousandths of a per cent greater than that—be about $3600.00 more, but I think that is a very conservative, moderate allowance for that item.

Q. Does the 1.003 include all of the items shown in that line, casualty, liability and fire insurance?

A. No, it does not. As a matter of fact, I fully intended to put fire insurance in there on buildings and central office equipment during the construction period, but as a matter [fol. 2972] of fact, the fire insurance item was left out.

Q. That would increase the one per cent would it not?

A. It would slightly, yes. Probably—well, it would be around one quarter of one per cent on—possibly two-tenths of one per cent in addition. That item was left out inadvertently; it should have been included; so that the item as indicated contains nothing but casualty and liability insurance. What it should have been would have been two tenths of one per cent of the sum of central office equipment, and buildings, which is about twenty-five million dollars, but that gives you about close to $50,000.00 more.

Q. The item of taxes during construction and your computation of the cost of reproduction with respect to that item involves a construction program for the property of the company does it not?

A. Yes, taxes are assessed against the company from year to year. As I recall, they are assessed in December I think and payable the next June and December. Isn't that correct. Yes, the taxes for 1925 for instance are taxes for property as it existed on December 31, 1924 and are payable 50 per cent in December, '25 and 50 per cent in the following June,—that is 18 months later so by referring to page——

Q. 130?

A. 130 I have set out the way in which a property could most economically be built according to my best judgment. You will notice opposite the figures in the third column are certain figures in the 6th, 10th, 14th and 18th quarters, which are indicated by a star. Those represent the prop- [fol. 2973] erty in existence which is not in service,—no, those stars indicate the property in existence on each assessment date at every 12 months period.

In the second column are two figures, one opposite the 14th quarter and one opposite the 18th quarter, which represent the plant in service, and opposite the 6th quarter and the 10th quarter, there is no plant in service, so that by carrying the first two items directly across to the last column and in the case of the 14th and 18th quarters, by making the subtraction and carrying the remainder across, we find the amount of plant subject to assessment, which is still in process of construction.

The personal property taxes and the real estate taxes alone were considered in this calculation. No allowance for income tax or—well, there was $5,680.00 of a conservancy tax included on items considered were personal property; $1,425,440.00, real estate taxes, $127,244.00; conservancy tax $5,680.00, which represents 1.4 per cent of $111,020,515.00.

Instead of taking a ratio of the actual taxes made to the book cost I have simply taken the ratio of the taxes paid to the reproduction cost. As I understand the tax rate in Ohio is somewhat over two per cent—2.2 per cent, or something of that sort, and if you will notice this calculation on Page 130, it is based on 1.4 per cent so that 1.4 per cent of the figures shown in the last column on Page 130 represent

the taxes which should be properly chargeable to construc-
[fol. 2974] tion during the period of building the property.

Q. Do I understand that the table shown on Page 130 represents the construction program for the reproduction of the property of The Ohio Bell Company?

A. Yes.

Q. According to your judgment?

A. Yes.

Q. And that is to say you believe that the property would be constructed in dollars in the total amounts per quarter shown on that page?

A. In the first column?

Q. Yes, the first one?

A. Yes, that is the figures in the first column there represent the reproduction amount of plant built at the end of each quarter.

Q. Yes.

A. And beginning with the 14th quarter why $70,000,000.00 of property has been put into service so of course no taxes against that should be chargeable to construction. It is only the residue that is not in service that I have calculated the taxes against.

Q. Yes, but it is on that theory that the exhibit has been prepared?

A. Yes.

Mr. Burr: Were you going to ask him something, Mr. McConnaughey?

Mr. McConnaughey: I was going to ask him where he got the amount of taxes that he used.

The Witness: Got it from the books of the company.

Mr. McConnaughey: What is that, the taxes paid in 1925?

The Witness: Well, that is the taxes paid in 1925.

Mr. McConnaughey: Yes.

The Witness: But it is on assessments on the previous
[fol. 2975] December.

Mr. McConnaughey: Yes.

The Witness: That is, it would be the taxes payable on the property in existence as of December 31, 1924.

Mr. McConnaughey: Well, now, of what figure is that computed to be 1.4 per cent?

The Witness: Of the one hundred eleven million contained in my report.

Mr. McConnaughey: Yes.

Mr. Burr: Now, will you go back and read just what the question and answers were—what was the last answer?

(Previous testimony read.)

The Witness: As a matter of fact, that has not all been paid. You see if it was assessed on December, 1924 all of it would be paid this coming Dec ber, the other half in June, 1926, half——

Mr. McConnaughey: This is '26.

The Witness: The other half will be payable in this June.

Mr. McConnaughey: Well, you have taken only those taxes——

The Witness: Yes, that is right.

Mr. McConnaughey: The last year's taxes that has been assessed.

The Witness: Yes, that is right.

Mr. McConnaughey: And gotten the percentage of that.

[fol. 2976] The Witness: Of the reproduction cost.

Mr. McConnaughey: Of the total reproduction cost; then you have not used these figures at all in the third column, have you?

The Witness: Yes, all I did was to get the rate there, 1.4 per cent, but I had not applied that against one hundred eleven million; I have applied that against only the ninety-three million shown on the last column; all I used the one hundred eleven million for was to get the rate of 1.4.

Mr. McConnaughey: I see.

The Witness: You see I could according to one theory of reasoning have taken the book value and divided the taxes into that and got 2.2 per cent, or whatever it is, I think it is about right.

Q. Explain your computation of the interest during construction item, $6,144,099.00, shown on Page 1 of the appraisal?

A. The table on Page 131 in many respects is similar to the one shown on Page 130, except that the figures shown on Page 131 contain all undistributed costs except interest, whereas on Page 130 they do not contain any so-called overhead expenses or undistributed expenses.

Q. Why, what is the reason for the difference?

A. Well, I just assumed that in taxation the costs of engineering and so forth might not be subject to taxation. On

the other hand they might be. In that case, my tax item might be somewhat larger.

Q. Yes.

A. But it might be well to bring that point out a little [fol. 2977] more fully that that tax item does not contain any allowance for taxes on engineering, interest, casualty insurance, general, administrative or any of those other overhead costs, except omissions.

Q. Proceed please with your discussion of interest during construction?

A. Now, on the next page 131, the calculation is identical except that these items which I have enumerated are included in the first column, with the exception of interest which I am trying to determine; the first column represents the plant as I conceive it to be built.

The second column represents the plant ready for service——

Q. As you conceive it would be cut into service?

A. Yes, as I conceive that it would be economically cut into service; and the third column represents the difference between these two columns, so that the third column represents the proportion of the plant, the interest charges against which should be chargeable to construction and not to operation. I have simply taken interest at 6 per cent per annum or one and a half per cent per quarter and multiplied each of the items in the third column by one and a half per cent to arrive at the interest charges as shown in the last column giving $6,144,099.00.

Q. Representing what?

A. Well, that is just simple interest against plant built, but not cut into service. Now, as a matter of fact, if property were being built in this manner, it would be proper to [fol. 2978] compound that interest, but I have not done that. I have simply taken it on a simple, straight basis, not compounded.

Q. So that the amount of $6,144,099.00 shown in your appraisal for interest during construction represents what?

A. Simple interest at the rate of six per cent against that portion of the plant not ready for service during the construction period.

Q. That is the interest during construction incurred in the reproducing of the property of The Ohio Bell Telephone Company as of June 30, 1925?

A. That is correct.

Q. What was the source of the amount shown for construction work in progress, $2,223,718.00?

A. That is only shown on Page 1 of the report. That is simply a statement of the construction work in progress, less interest.

Q. Yes, but where did you procure that amount?

A. That was supplied me by the engineers of the company, simply a statement of the construction work in progress as of June 30 after the deduction of interest which had been charged to construction.

Q. How did you arrive at the amount for working capital including cash and supplies at four million dollars in your appraisal?

A. Well, I made a number of calculations regarding the period of time elapsing between the average date of rendering service and the date of billing for service and the average date for collecting for service and I took a couple of—tried two methods of more or less rule of thumb methods, which have had more or less general acceptance in arriving at this amount:

[fol. 2979] One of which was to take the operating expenses for a period of eight weeks, plus the stores and supplies which gave $3,680,752.00.

Another method was to take 15 per cent of the gross revenue which gave $4,270,495.00. The average of those two amounts is $3,975,623.00. I rounded it off to $4,000,000.00, as that is somewhat less than—around $7.00 a telephone, which in my opinion is a very conservative figure for working capital for a property of this size where such a considerable portion of the total revenue is toll revenue and received for quite a period of time in arrears after the service is rendered.

Q. That in your judgment is the proper amount for working capital including cash and supplies for what property as of what date?

A. For the Ohio Bell Telephone property as of June 30, 1925.

Mr. McConnaughey: What were your figures for eight weeks' operation?

The Witness: $3,680,752.00.

Mr. McConnaughey: And how much for supplies?

The Witness: Well, that is total—eight weeks' operation was $2,290,426.00, and the stores and supplies was $1,190,336.00.

Q. In the last column of figures shown under the heading of cost less depreciation you have shown an amount opposite each class of property. I will ask you to tell the Commission how you arrived at those amounts?

A. You mean the cost less depreciation?

[fol. 2980] Q. Yes.

A. In general the per cent. condition of the property is determined by a very careful field inspection. I believe I testified before that I had had visited about 120 of the switchboards. I have a series of gauges to measure the wear on switchboard jacks. In the switchboards which I visited, I insert these gauges in the jacks and determine the amount of wear; that is, the gauges were graduated from perfect, a size for the new jack, down to one that would be completely worn out. A series of gauges consisted of six different sizes. When the switchboard is built, take the common battery multiple switchboard, the first installation we will say consists of 5 sections of three thousand multiple. The next addition may consist of two more sections with that three thousand multiple plus another thousand multiple that is distributed through the five earlier sections and so on down the line, so that if you know somewhat about the time when the different conditions were put on the board, you can make a series of gauge measurements that give you a fairly good picture of the wear in each section of the board as it was built.

I took quite a large number of measurements of this type to determine the wear which has occurred on the jacks; the jack and the key are the two parts of the board where most of the wear occurred. The remainder of the board is more or less stationary and not subject to very much wear.

With a knowledge of the amount of wear on the jacks [fol. 2981] and the inspection of the keys,—it is difficult to measure the wear on the keys except by moving the handles and other inspections of that kind—it is possible to arrive quite accurately at the general condition of the board and that combined with a general inspection as to its general maintenance, the way the multiple cable in the back of the board has been taken care of, the neatness with which it has been maintained are all factors that enter into the condition of the board and I have taken all of those facts into consideration in arriving at the figures which I have shown in this report.

Q. That is for central office telephone equipment?
A. Yes, many miles of pole line that were inspected,——
Q. You are now referring to exchange and toll lines both?
A. Yes.

Mr. Burr: Wait a minute, "Exchange and toll pole lines," put it.

Q. Go ahead?
A. And in fact I spent a large amount of time personally in inspecting the property and my inspection together with the fact that such a large amount of it has been built within the last three or four years are the factors which I have used in arriving at the per cent. condition which I have indicated in my report.
Q. Did you make any examination of the other equipment of central office in order to determine its per cent. condition?
A. No detailed examination in the way of maintenance,—that is you mean the furniture and locker room furniture and so forth?
[fol. 2982] Q. Yes..
A. Well, nothing except as I would observe furniture, say, in a room like this, just general inspection, I did not.
Q. That is about the only way you can determine the per cent. condition of that class of property?
A. Yes, you cannot determine the condition of that table for instance by any process of measurements. It is bound to be a matter of judgment.
Q. What examination did you make of the station apparatus and station installations in order to determine their per cent. condition?
A. I based the per cent. condition of station apparatus on a little somewhat different theory. The average turnover of the station apparatus is about four and a half or five years. By that I mean that stations go in and out, the average life in service, is about four years,—well, we will say five years with of course a very high resulting scrap value; that is they are simply taken out and the scrap value is about 70 per cent.—65 or 70 per cent. of the equipment new, and then it is placed back in service.
Q. Yes.
A. So that assuming scrap value of 70 per cent. the wearing value would be about 30 per cent. Now, if we made the violent assumption that that wearing value is only 50 per

cent,—50 per cent. and 30 per cent. is 15 per cent., and add to the 70 per cent. scrap value gives you a figure of 85 per cent.

Q. Is that the figure that you used?

A. That is the figure that we used. Now, as a matter of [fol. 2983] fact, that is not a quite fair proposition, because of the fact that—that would be a fairly accurate way of arriving at the per cent. condition of instruments if the plant were not growing—if it were a stationary plant, but as a matter of fact the property is growing very rapidly so that there is a constant influx of new telephones going in all the time that I have reached this 50 per cent. condition which I have described.

Q. So that as a matter of fact, the per cent. condition should be higher than 85?

A. Yes, to be perfectly fair, that percentage should be slightly above 85, I would say 87 or 88 per cent. would probably be nearer the fact than 85.

Q. You are now talking about station apparatus and station installation?

A. Well, I put them at the same per cent.

Q. I didn't ask you what per cent. condition you found to obtain for the central office telephone equipment as a result of your inspection?

A. Well, let's see, that is shown—after weighting out the various figures to the various switchboards, as I recall the figure the figure came about 89.7 per cent, or something like that; it was so close to 90 that I simply rounded it off to 90 per cent.

Q. Yes.

A. I think it, as I recall it, was about 89 and a fraction per cent.

Q. Did you make any inspection of the interior block wiring?

A. Not a very extended inspection of that particular item, because it is a very small item. I only inspected the [fol. 2984] block wires in connection with the drop wires, and as a matter of fact, the block wire is in many respects very similar to a drop wire, or the wire from pole line to the subscriber's house.

The difference is that instead of it being installed in the air from the pole to the house, it is attached to the building wall.

Q. What was the per cent. condition which you found for interior block wire?

A. Well, I put that the same as the instruments, 85.

Q. 85. What inspection did you make of the private branch exchanges of the company?

A. I totaled about—what was the total?

Q. Page 52 of your appraisal?

A. I will have to add them up. There was about (after examination) approximately 200 private branch exchanges were inspected, the condition of the keys and the condition of the jacks and the lamps and general condition of the switchboard was observed and in addition to that, the fact was considered that in certain towns where the automatic or machine switching is about to be installed, Toledo is an instance, practically the entire number of private branch exchanges in those cities have been completely remodeled in order to operate in connection with the new automatic equipment. Those various inspections that were made plus the conditions in those towns where a new type of service is to be offered I have considered in arriving at the per cent. condition of the private branch exchanges.

[fol. 2985] As I recall that figure, at the time I visited Toledo, there has been something over 300 private branch exchanges that had gone through the shop at that time and were in practically 100 per cent condition.

Q. Yes.

A. No, I don't know the exact number in Cleveland, but a very large number of the private branch exchanges in the downtown area of Cleveland have been thoroughly overhauled and equipped with the automatic equipment at the same time, so that that part of the equipment is in very excellent condition, by that fact alone, and outside the fact that it has been well-maintained generally.

Q. What did you determine the per cent condition of that class of property to be?

A. I put that at 85 also.

Q. Now, these per cent. condition- which you are giving represent your judgment of the per cent. condition of the various classes of property as of June 30, 1925.

A. That is correct.

Q. I won't repeat that question every time.

A. (No response.)

Chairman Marshall: We will recess now until ten o'clock tomorrow morning.

And thereupon the further hearing of this matter was adjourned until Wednesday Morning, March 31, 1926, at ten o'clock, A. M.

[fol. 2986] Wednesday Morning Session

March 31st, 1926.

And also WILLIAM F. SLOAN, resuming the stand, for further examination in chief, continued his testimony as follows:

Examined by Mr. Burr:

Q. Mr. Sloan, at the close of yesterday's hearing, you were discussing the per cent condition of the property of the Ohio Bell Company, covered by your appraisal, and you had reached the point, I believe, of discussing the per cent condition of the booths and special fittings. In order to condense your testimony as much as possible, will you please take up that item of plant, and follow it with the other items, giving your judgment of the per cent condition which you arrived at for each class of plant by the inspection method, also describing in a general way how your inspection was made and the per cent condition which you charged for each of those classes of plant.

A. Well, I think I described yesterday that I spent a good deal of time in the state, inspecting the property. The method employed on booths, and as a matter of fact all other classes of plant, was very similar, observing the conditions of the various items of plant, and applying percentages that in my judgment affected their present condition. Now, the figure for booths——

Q. And special fittings?

[fol. 2987] A. The booths and special fittings, as shown on page 52, is 85 per cent. The same methods were employed throughout, except that the percentage is varied for various kinds of plant.

Poles, shown on page 53, are 80 per cent.

Exchange aerial cable, as shown on page 59, is 90 per cent condition. Now, I might say that that figure of 90

per cent on aerial cable is the net percentage. As a matter of fact in lead covered cable you have a residue of scrap value of from oh, 15 to 20 per cent of the total cost. One method of depreciation would be to subtract the salvage value from the total cost, and then multiply the residue by your per cent condition and add the salvage value back. But this is the net figure, with the residue of salvage left in.

Q. Proceed.

Mr. McConnaughey: Salvage left in?

The Witness: Yes. I did not follow that method. I simply applied the percentage direct, which gives consideration to the other method, if I had done it that way.

Now, referring to page 60, you will note that the percentage on aerial wire—there are a number of different percentages that have been used. The percentage used against bare iron wire was 75; the percentage against bar-copper was 95; the percentage against insulated iron was 75; against insulated copper is 85; and against twisted pair copper and drop wires is 85.

Now, in regard to the figure of 85 per cent of bare copper, it is difficult to know or explain why there should be much of [fol. 2988] any depreciation, because, as a matter of fact, copper wire in a physical sense does not depreciate unless it is subjected to the attack of fumes of some sort, like wire in the vicinity of a chemical plant or in the vicinity of smoke, where sulphur fumes would attack it. But ordinarily in clear country, where there were no fumes of any sort, copper wire has a straight life almost indefinite. It is not subject to very much depreciation.

Q. What did you find to be the per cent condition of the exchange aerial cable again, if you please?

A. Aerial cable is 90.

Q. And exchange aerial wire?

A. Well, a varying percentage, the composite of which for aerial wire is about 82½ per cent, although part is 75, part 95 and part 85.

Q. As shown on page 60?

A. On page 60, yes.

Mr. Hagenah: Just to understand you correctly as to the per cent condition as you explain it, if you were to show the percentage separately for the wearing value, proportioned only on the basis used, it would be somewhat a lower per cent than shown here?

The Witness: Yes, sir.

Mr. Hagenah: This being the net, reflects the restoration of the salvage value?

The Witness: Yes, sir, that is correct. In case of aerial cable for instance, where I have shown 90, it would have probably been 85, applied to the wearing value and adding the scrap value back.

Mr. Hagenah: Is that true all through the report, where-[fol. 2989] ever salvage value is a material factor?

The Witness: No, I have not been consistent in applying that method. In the case of instruments, for instance, I figured a final net salvage of about $2.00 in the application of a percentage, and in one or two instances I have used the scrap value method, but in general I have applied this other method.

The underground conduit per cent condition is shown on page 91, 95 per cent.

The underground cable, shown on page 107, is 95.

Submarine cable, shown on page 107, is 95.

Toll pole lines, shown on page 108, is 80 per cent.

Toll aerial cable, shown on page 114, is 95.

I might add, in connection with the per cent condition of toll aerial cable, that the whole development of the use of cable for toll purposes is a rather late development in the telephone business and a very considerable part of this toll cable is of the latest type, quadded cable, composite cable, which is of a very late type, and the percentage is necessarily high on that class of property.

Q. The next item is toll aerial wire.

A. Toll aerial wire is shown on page 115 and has been treated in the same way as exchange aerial wire. In this case, in view of the fact that the copper wire, to a very large extent, is out in the open country and is not subject in any way to fumes or smoke or not subject to the same degree to the fumes or smoke as it would be in the city, I have used 98 per cent as against 95.

[fol. 2990] The bare iron wire at 75; insulated copper 85; insulated iron at 75, and the twisted pair wire at 85, giving a composite of about 95½ per cent. That high percentage is, of course, due to the fact that such a large portion of the total is copper wire.

The toll underground conduit, shown on page 116, is 95 per cent.

Toll underground cable, shown on page 127, is 95 per cent.

The same thing holds true in regard to toll underground cable as is true in connection with aerial toll cable. Much of the cable is of the composite quadded type, which is very recent and is in a very high per cent condition.

Toll submarine cable on page 128, 95 per cent.

The general accounts, as shown on page 129, are in substantially the same per ~~cent condition~~—are in the same per cent condition as used by the company. We have accepted those figures. I think that briefly covers the percentages that we have used for depreciation.

Q. Now, in the summary sheet, page 1 of your Exhibit No. 1, there is shown the column "cost less depreciation." Am I correct in my understanding that the amounts shown in that column represent the per cent condition in dollars of the corresponding items shown in the column headed "cost of reproduction?"

A. Yes, the figures shown in column 2 are simply the figures that appear on the various pages as I have discussed them, carried forward on page 1, both for the new cost and the depreciated cost.

[fol. 2991] Q. Now, what is your composite per cent condition for the entire property? Have you worked that out?

A. Well, I will have to do that. It would be 99,415,000, divided by 111,020,000, which would be substantially 89½ per cent.

Q. Now, when you speak of the percentages which you have used, also percentages which are shown on the different pages covered by your previous answers on the subject of per cent condition, tell the Commission whether or not those percentages represent your judgment of the per cent condition of the different classes of plant covered by your appraisal?

A. Yes, they reflect my best judgment of the per cent condition of the various items of the plant, as the result of very careful inspection of the property.

Q. And I think you said yesterday that they represented the minimum per cents in your judgment?

A. Well, I don't know that I said minimum. I think they are the fair per cent condition of the property.

Mr. Burr: At this point we would like to have Mr. Sloan stand aside for a few minutes, in order that we may

interrogate another witness whose time is limited. Mr. Eaton may be sworn.

(Witness temporarily excused.)

[fol. 2992] And also CYRUS S. EATON, called as a witness on behalf of the Ohio Bell Telephone Company, being first duly sworn, testified as follows:

Examined by Mr. Burr:

Q. Your name is Cyrus S. Eaton?

A. Yes, sir.

Q. Are you the same Mr. Eaton who testified before this Commission in the so-called toll rate case, A. U. R. P. No. 124, on February 29th, 1924?

A. I am.

Mr. Burr: We offer in evidence Mr. Eaton's testimony taken in that case, and also we would like to offer in evidence testimony of Mr. Crunden in that case, who appeared as a witness here yesterday, and whose testimony I forgot to offer into the record while he was testifying.

And thereupon the testimony of Cyrus S. Eaton and A. B. Crunden, taken before the Commission in A. U. R. P. No. 124, was admitted in evidence on behalf of The Ohio Bell Telephone Company, and is made a part of the record herein.

[fol. 2993] Q. Mr. Eaton, what position, if any, do you hold with any public utility companies at this time, and what has been your public utility experience since the date of your testimony in the toll rate case?

A. I am Chairman of the Board of the United Light and Power Company. I have the same position in the Continental Gas and Electric Corporation. I am President of the Columbus Railway Power & Light Company. I am a Director and member of the Executive Committee of the American Light and Traction Company.

Q. The Columbus Railway Power & Light Company is the company which furnishes street railway, electric light and power service to the city of Columbus and this vicinity, is it not?

A. Yes.

Q. What experience, if any, have you had in the matter of financing public utility companies since February 29th, 1924?

A. My firm, Otis and Company has been actively dealing in public utility companies securities since that time, securities of the Columbus Railway Power & Light Company, the Kansas City Power & Light Company, the Lincoln Gas and Electric Company, and a considerable group of other street railway, light and gas companies.

Q. Do you occupy any position with respect to any banking institutions in the city of Cleveland?

A. I am a Director of the Cleveland Trust Company and serve that bank in an advisory way with reference to its loans and matter of that sort.

Q. Will you give the Commission some idea of the size of the Cleveland Trust Company and of its business generally?

[fol. 2994] A. It has a capital and surplus in excess of 13 millions. Its deposits exceed 200 million dollars. It does a general banking business, a commercial banking business, a savings banking business, it acts in a trust capacity, and also buys and sells bonds.

Q. You mentioned in one of your previous answers the firm of Otis and Company, of which you are a member. Is that a banking house engaged in the buying and selling of securities?

A. Yes.

Q. By the buying of securities do I understand you to mean in part the purchasing in large volume of the securities of public utilities and industrial companies and the subsequent disposition in the market of those securities by sale to customers generally?

A. Yes, sir.

Q. What has been the approximate amount of securities financed by your house for public utility and other industries during the past two years?

A. They run in excess of 100 millions a year.

Q. Are you familiar with the financial market for the securities of such a utility as the Ohio Bell Telephone Company?

A. I am.

Q. Are you familiar with the conditions upon which such securities are issued, that is to say, with respect to the

property and earnings of the utility on the one hand and the amount of securities which can be reasonably issued and sold by it on the other?

A. I am.

Q. Are you also familiar with the cost of money paid by such utilities as the Ohio Bell Company; and by "the cost [fol. 2995] of money" I mean not only the interest rate to be paid upon the securities issued, but also the discount, if any, at which the utility must put out its securities in order to find a market for them?

A. I am familiar with those conditions.

Q. Are you familiar with the revenues and expenses and net income of the Ohio Bell Telephone Company for the past two years as shown by its annual reports for those two years?

A. Yes.

Q. Are you acquainted with the property of the Ohio Bell Company?

A. Generally I am. I know that is operates telephone systems and lines throughout the State of Ohio, with the exception of Cincinnati, and I am generally familiar with its property.

Q. At page- 656 and 661 of the record in the so-called toll rate case, you testified that in your judgment a public utility, such as the Ohio Bell Telephone Company, should earn a minimum of 8 per cent on the fair value of its property in order to attract capital to the enterprise. What is your judgment in that respect today?

A. I still believe that it ought to earn a minimum of 8 per cent after all proper charges and reserves on the fair value of its property.

Q. Will you give the Commission some of the reasons for your answer?

A. The company's money requirements, of course, are very substantial from year to year. They are very substantial in most any public utility, perhaps especially so in a growing industry like that of the telephone company, [fol. 2996] where more people are using its service and where people who are now using it demand more service. The need for money is very great, so that it has to secure its funds every year. And in doing so, it has to compete with all other enterprises and institutions that are seeking money. For instance, I will state it this way, that an in-

vestor looks around to see how he can best employ his funds. And the telephone company is in competition with all other seekers of money.

If a man is inclined to, he may invest his money for instance in the bon-s of a foreign government. In that instance the government will pledge every asset in the country, its telephones, its public utilities, its banks, its real estate. There are obligations of that kind. Some of them are secured by a first charge on the taxes of the country, or a first charge on the receipts of utility companies. There are investments of that kind available to yield between 7½ and 8 per cent. That is one field of competition.

Another is offered by a first mortgage real estate bond. For instance, if you take the best corner in the city of Columbus, a banking house would sell bonds secured by a first mortgage on that property, to yield the investor 6 per cent. He would charge the borrower a discount of 5 or 6 points. There is an investment which involves no business hazard, no risk. It has taken that small percentage of the total value, and a conservatively inclined man can go into something of that sort, the safety of which is not influenced by business conditions at all. It is always there.

[fol. 2997] The same man might go into a farm loan, on which he would get 6 per cent, and the loan would represent maybe 40 per cent of the fair value of the farm. He would not have to think about business conditions. He would know that that was safe.

Or the investor might go into a good Ohio industrial, and he can buy into many of them, the common stocks of which are earning anywhere from 12 to 25 per cent.

The Telephone Company could be compared perhaps with all those three classes. If it — ably managed, sponsored by strong people, pursuing progressive policites so as to be meeting the demand of the public, it is not as great a risk as the average highly competitive industrial. So therefore, the man going into the industrial usually says, "I want a minimum of 12 per cent", or he may want 20 or 25, if it is highly competitive.

The telephone company being less of a risk than a highly competitive industrial, in my judgment an 8 per cent return is a fair return.

It is much more hazardous than a loan on a piece of real estate, less hazardous than a highly competitive industrial

undertaking, so that my experience of many years in handling securities led me to the conclusion that the investor in the long *run* will demand that an institution such as a telephone company, earn that much if he promptly and readily supplies his money to it.

Now, that is a comparison of the telephone industry with other industries. There are very particular reasons in the [fol. 2998] industry in recent days why a return of that kind is demanded. The company must lay up a surplus. It is highly unsound for a utility or any other business to raise from the investor the entire amount of money that it requires for extensions and improvements. It ought in sound practice be allowed to earn a surplus and to reinvest some part of it in extensions and additions to its undertaking. So that, in order to pay a fair return on the money invested and in order to provide against the contingencies and hazards of business and to provide a part of the funds required for extensions and additions, it is my conviction that eight per cent is an absolute minimum that an undertaking of this kind should be permitted to earn.

Q. What are some of the items which banking houses such as yours consider in determining whether or not to finance the securities of such a company as the Ohio Bell Company?

A. We consider the value of the company, the value of the company as compared to the securities issued in it. That perhaps is No. 1.

No. 2 is the earning record of the company.

Three is the possibility for earnings and profits in the future. We consider further the character of the management, their skill and experience in handling such things, their financial responsibility, and then we further consider their relations with the communities they serve and their relations with the public and regulatory bodies that prescribe their rates and impose the conditions under which they operate.

Q. At pages 681 and 682 of the record, you testified to [fol. 2999] certain savings to the Ohio Bell Company, due to its ability to borrow temporarily from the American Telephone & Telegraph Company money on unsecured notes. In your judgment would the same principle apply today?

A. My judgment is that the same principle applies.

Q. You are familiar with your testimony in the toll rate case?

A. Yes, sir.

Q. To what extent does your judgment as to the advantages to the Ohio Bell Company from the license contract between it and the American Telephone & Telegraph Company differ today from your judgment of them at the time of your testimony in the toll case?

A. It does not differ. My judgment is that it is a very decided advantage to the Ohio Bell.

Q. Has your attention been called to your answer to page 682 in the toll case and particularly to line 12, with respect to the word appearing there as "less"?

A. Yes.

Q. Tell the Commission whether or not the word "less" should read "more".

A. My exact word, I think, was excess, which perhaps sounded like "less", and the words should be "in excess of" or "more."

Q. Also at page 683 of the record in that case tell the Commission whether or not the word "who" in line 8 should read "and?"

A. It should be "and."

Q. You spoke a moment ago about foreign bonds and the yield on them. Tell the Commission whether or not those bonds are available to investors in the American markets today?

A. They are. The American market is the chief source of supply of money for the world.

Mr. Burr: You may cross-examine.

[fol. 3000] Cross-examination.

By Mr. McConnaughey:

Q. I understand you to say that it is your opinion that a company such as the Ohio Bell should earn eight per cent. or pay eight per cent. on its securities, which?

A. Should earn.

Q. In making that statement do you have in mind any particular structure or financial organization or an ideal structure, or just how do you work that out?

A. It is my judgment that a minimum of eight should be earned, regardless of the financial set-up.

Q. And regardless of the value, or do you have in mind

the concrete instance of the Ohio Bell Telephone Company, as you understand it to exist?

A. Yes, I feel that the Ohio Bell Telephone Company, as it exists ought to earn eight per cent. on the fair value of its property.

Q. What is a reasonable proportion of the value of a public utility of this kind to cover by a bond issue?

A. That it seems to me depends entirely on the attitude of those who put money into the common stock. My own feeling is that the absolutely ideal financial set-up for any company, public utility or industrial, is all common stock. If you want the ideal picture that I would like to see in every kind of company, and the one that is the soundest and safest and best, you would have nothing but common stock.

Q. Do you know of any public utility that was organized in that way?

A. Yes, there are some.

[fol. 3001] Q. Are any of those that you are connected with organized that way?

A. No.

Q. What percentage do the companies that your are connected with issue in bonds?

A. That varies. About 40 per cent. in bonds is the practice with us.

Q. What must bonds pay the investor in order to find a market as things are at the present time?

A. Depending, of course, on the factors that I mentioned awhile ago, value, earnings, management, relations with the public, from five and one half to six per cent. is the cost of money today to the company on well secured first mortgages, for instance; from six and one half to seven and one half on preferred stocks.

Q. What were the companies that you said you were the Chairman of the Board of?

A. United Light & Power Company; Continental Gas & Electric Company.

Q. What was the other utility you mentioned?

A. The American Light & Traction Company.

Q. What proportion of the capitalization of those companies is in bonds?

A. Those are holding companies that own operating utilities in different parts of the country, and our average on bonds would be about 40 per cent.

Q. About 40 per cent; is that of the value or of the total security issue?

A. That is of the total security issue.

Q. What per cent. is that of the value?

A. That varies in different companies, and it is sought to have those amounts of securities correspond as closely to the values as possible. In some instances they do not. In some instances the values are very much greater than the amount of securities issued.

[fol. 3002] Mr. McConnaughey: That is all.

Commissioner Maullar: Anything further, Mr. Burr?

Redirect examination.

By Mr. Burr:

Q. In case a part of the capital structure of a company is represented by bonds and part by preferred stock and part by common stock, isn't it true that the common stock would have to earn more than eight per cent. in order to provide for the surplus to which you have referred?

A. It must earn more than eight per cent. yes.

Mr. Burr: That is all.

Recross-examination.

By Mr. McConnaughey:

Q. You had before you, I think, when you were testifying the statement of the Ohio Bell Telephone Company for 1925, did you not?

A. Yes, sir. 22

Q. Would you be willing to lend that company money on its notes on that statement?

A. Not in any amount, no.

Q. How much would you loan them on that statement?

A. A million dollars.

Q. Taking into consideration the fact that it is owned and sponsored by the American Telephone & Telegraph Company, would you lend them anymore than that?

A. On the guarantee of the parent company, but not on their own credit.

[fol. 3003] Q. On the written guaranty of the parent company?

A. Yes.

Mr. McConnaughey: That is all.

And also WILLIAM F. SLOAN, resuming the stand for further examination in chief continued his testimony as follows:

Examined by Mr. Burr:

Q. Mr. Sloan, the total amount shown in the column headed "cost of reproduction" on page 1 of your Exhibit number 1 represents what in your judgment?

A. Would you mind reading the amount you have in mind, Mr. Burr?

Q. $156,073,269.00.

A. That figure in my opinion is the fair cost of reproducing the physical property of the Ohio Bell Telephone as of June 30th, 1925, together with all undistributed construction expenditures, such as engineering, taxes, interest and so forth, and including the construction work in progress as of that date, together with a fair allowance for working capital, and the reasonable cost for attaching the business of the company.

Q. The last item will be referred to later. What is represented by the amount shown at the foot of the column headed "cost less depreciation," the amount being $142,760,154?

A. That is the same figure as described before, with the exception that it represents the condition of the property as it exists today.

[fol. 3004] Q. As arrived at by actual inspection?

A. Yes, sir.

Q. If, instead of evaluating the property of the company on the wholesale reproduction basis, as you stated you have done, what would have been the result if you had evaluated it on the basis of the company's actual construction performance during the past four or five years.

A. You mean if I had taken the actual construction records as I found them?

Q. Right.

A. And applied those and based my units on that finding?

Q. Exactly.

A. Well, the material, of course, would not change; the material portion of it would be the same as it is now. The labor and incidentals, which constitute about 40 per cent. of the total, would be increased except in the case of conduit, about 20 per cent. So that 20 per cent. of 40 per cent. would be about eight per cent., and, deducting the allowance for conduit, I should say that it would affect the total figure somewhere between seven and twelve per cent., depending on just how much—I have not made the exact calculation, but it would be in that range.

Q. Which would be an increase or a decrease as compared with the figures shown on page 1 of Exhibit 1?

A. It would be an increase, because the actual performance of the company, which constitutes the way they actually built the property, part of it in routine manner from day to day and a part in wholesale manner—the costs would certainly be as much as seven and perhaps more per cent. higher than the figures I have shown.

[fol. 3005] Q. Is there inherent in the Ohio Bell Telephone Company an element of value over and above the bare bones of the property itself, represented in part by the fact that the company has an established assembled plant and is doing business and is earning money?

A. There is.

Q. Is that value sometimes described or referred to as "going value" or "going concern value"?

A. Yes, I think that is the common way of describing such a value.

Q. Does a part of that going value or going concern value consist in the cost of establishing the business?

A. Yes, to my mind one of the very considerable portions of going value would be the cost of attaching the business after your plant is being built. That is, as a matter of fact, what actually happens. As the plant continues to grow, expenditures are made from day to day to establish business.

Q. In your judgment does the cost of establishing the business as you will develop and evaluate it in this case, include all of the going concern value of the Ohio Bell Telephone Company?

A. Would you mind repeating that question again?

(Question read.)

A. No, I have not tried to make a complete determination of going value. I think a portion, that is, the development of the complete going value, I think, lies somewhat out of the field of the engineer. I think that an engineer can make reasonable estimates of the cost of attaching business to a property, but it strikes me there are other elements in going value that are more of an economic or [fol. 3006] financial nature, that I have not tried to discuss or arrive at. That is, I have in mind—well, a company that has had a certain amount of money expended in building the property and developing the business and has arrived at a certain definite point; it is there, and the hazards of the business have been eliminated, the uncertainties of embarking on a new enterprise have been eliminated. Now, they may be more and they may be less, but there is always some element that an investor would consider if he were confronted with either the problem of building a new enterprise or taking the one that is already there. And I have made no attempt to arrive at such an item, although I feel that there is such a thing, a thing that would be considered in a purchase or sale. The figure that I have attempted to arrive at is a thing that is based on the every day experience of the company in the way of carrying the plant and training forces and getting business.

Q. Does your Exhibit No. A-1, pages 132 to 139 inclusive, describe the method employed by you in arriving at the cost of establishing the business of the Ohio Bell Company?

A. Yes, I have attempted to set out my ideas as to the reasonable manner in which this property would be built and the reasonable and economic way in which the business could be attached.

Q. What do you believe to be the construction period required to reproduce the property?

A. Well, I do not think you can by any stretch of the imagination build a property of $127,000,000 in any period much less than five years. As a matter of fact, I have se- [fol. 3007] lected a period of five years to build the property. I think there is some doubt as to whether that much material and labor could be had in that length of time, particularly the supplying of central office equipment and cable in those amounts. There is over -17,000,000 nearly $18,000,000 of central office equipment, which would be quite a strain on the resources of any manufacturing group,

to turn out in -hat length of time. I think five years would certainly be a minimum period for reproducing this property, certainly in an economic manner.

Q. How much time would be required in your judgment for preliminary investigation, engineering and administrative work, prior to the commencement of the work of actual construction?

A. Well, I have been engaged, I have been associated with the construction of properties in the past, and it has always been, it is customary practice to spend a period of from six to nine months or a year in preliminary investigation before construction is started. That is just ordinary good sense. You would not undertake to spend $127,000,000 on a property of this kind without making a very thorough preparation before you start. I have assumed a period of nine months.

Q. Does that represent your judgment?

A. I think that that is a very reasonable period. There is a very large amount of financial arrangements, legal arrangements, certainly a tremendous amount of preliminary engineering work, which would have to be met before construction would start.

Q. Have you made a study of the cost of establishing the business, including the proper construction and development periods, of other telephone properties in the past?

[fol. 3008] A. Oh yes, I have made a number of such studies.

Q. Have you for the purposes of this case arrived at your judgment as to the amounts of construction which would take place in the various quarters embraced in the five year period to which you have referred?

A. Yes, on page 138 I have set out what to my mind is a very reasonable program for building a property of this size.

Q. Reasonable from what standpoint?

A. The dollars that could be expended without extravagant or without crowding the construction to such a rate that uneconomical results would be obtained.

Q. In your judgment would the plant be constructed more rapidly than it could be coordinated and placed in service?

A. Oh, that is always true. That is true in your ordinary

gross construction from year to year. It is true of any company as a matter of fact.

Q. In the construction of a plant such as that of the Ohio Bell Telephone Company, would it be necessary in your judgment that the plant, when finally ready for service, should in general exceed in capacity the necessities for the business immediately available?

A. Almost invariably true. The study of the gross construction of any large company during any year will almost invariably indicate that the gross construction of that year exceeds the normal investment per unit of output for that particular year. I might illustrate it in this way. We will say that the average investment per telephone in Ohio—I am just using figures—I haven't any definite figures in mind—we will say is $150.00 a telephone. I will venture [fol. 3009] the statement that gross construction during any one year for the past years has been from three to five hundred dollars a station. It is just illustrative of the point that I have in mind. It would not be good engineering just to build for the immediate business you could take on the next day. You have to build in excess of your immediate demands.

Q. In your judgment that would be necessary in the case of the Ohio Bell Company?

A. Absolutely, and I am sure their construction records prove that very statement.

Q. Have you prepared a table or statement showing the manner in which in your judgment certain of the fixed charges would accumulate during the construction and development periods of a property such as the Ohio Bell Company?

A. Yes. Now, if you refer to page 138, I have set out my opinion of a reasonable way in which this property could be built. Now, those same figures have been carried forward on page 139. 139 differs from 138 only in that the figures are accumulated on the second page, 139.

Q. Now, before we get away from that, I understand that the expenditures shown on page 138 represent your judgment as to the manner in which the amount necessary to reproduce the property of the Ohio Bell Company as of June 30th, 1925, would have to be expended by quarters?

A. That is true.

Q. And page 139 shows the cumulative cost of that construction by quarters?

A. Yes. It is the same figures involved on page 138, which are carried forward cumulatively on page 139.

Q. Now, with that for a starting point, will you show the Commission how you arrived at the main items shown [fol. 3010] in summary on page 134 as the costs to be incurred during the development period?

A. Well, before I discuss page 134, I would like to discuss page 135, and also—in fact, I would first like to turn back to page 131.

Q. Very well.

A. The figures on page 131, where the interest during construction has been derived, are in the first column figures that have been taken from page 139. You will notice the figures in column 1 on page 131 are those figures shown on page 139 in the third line from the bottom. They simply represent the cumulative cost of plant constructed before interest is applied.

In the second column on page 131 is shown the amount of plant which can be put into service and will be ready for service.

Q. In each quarter?

A. In each quarter.

Q. Now, the plant ready for service begins with what quarter?

A. The twelfth quarter.

Q. Why have you stated it at the twelfth quarter?

A. Well, in my opinion it would take that period of time before enough plant is ready for service to begin operation. As a matter of fact, although it is the twelfth quarter, three quarters must be subtracted from that in the beginning, when there is no construction started, so really you have a period of two and one-fourth years after construction starts, that is, a period of two and one-fourth years has elapsed after actual construction starts, before any plant is put into service, and that figure is shown in the second column on page 131, exclusive of interest charges.

Q. Now, just a moment please. The reason this sheet [fol. 3011] 131 shows the interest is because that same sheet was used in showing how you arrived at the item

of interest during construction, shown in the next to the last column on page 1 of your Exhibit A-1?

A. I did not get that.

Mr. Burr: Read him the question.

(Question read.)

A. Yes. That affords the basis for the derivation of the interest during construction.

Q. Before we get away from this, let me ask you whether or not in your appraisal there is any duplication of the item of interest during construction?

A. No. No, you will notice on page 131 that the plant ready for service has been subtracted from the total plant built, so that it is the only residue of plant that carries interest during construction or the plant that is not put into service, so that there would be no duplication.

Q. Go ahead.

A. Of the interest item. Referring to the second column, page 131, that column represents the dollars cut into service or ready for service. I have simply taken those figures forward to page 135, with the exception that I have added the interest to that. That is, the figure in the twelfth quarter on page 131, is 53,820,000, and with the addition of interest, it becomes $56,000,795.95, as shown on page 135.

In like manner, the figure of $66,040,000 on page 131 becomes $69,559,685.00 on page 135.

Q. And so on?

A. And so on down. As the title at the top of the column indicates that is the cumulative cost of plant ready for serv- [fol. 3012] ice, including the undistributed construction expenditures, that is, plant ready for service and on which all taxes and interest during construction have ceased.

In the third column on page 135 is shown the cumulative cost of plant on which the telephones in service can earn all charges, and by all charges I mean all operating charges, all fixed charges, depreciation, taxes and interest.

Mr. McConnaughey: In addition to operating expense?

The Witness: Yes. So that by subtracting one column from the other, you arrive at what I have described as the cumulative cost of the plant on which the fixed charges must be carried until the business is fully developed. Now, that is directly in line with the way gross additions are

made to the plant from day to day, not only in this company, but in practically all large going utility and industrial enterprises. The gross additions in any year exceeds the normal investment per unit during the first year. Now, I have arrived at the fixed charges to be applied against that amount as shown on page 136.

Q. Just a moment. Now, having arrived at the $366,573,236 shown at the foot of the last column on page 135 as the cumulative cost of plant on which fixed charges must be carried until the business is developed, as I understand it, you have applied to that amount a certain percentage in order to arrive at the fixed charges during the development period?

A. That is correct.

Q. The per cent that you have applied is 17, as shown on page 135?

A. That is the annual percentage. Of course, the amounts shown in the last column on page 135 are quarterly [fol. 3013] amounts.

Q. Yes.

A. So as a matter of fact the 17 per cent per annum must be reduced to 4¼ per cent per quarter to apply against the total shown in the last column of 135.

Q. Now, that gives you what?

A. That gives $15,579,363.

Q. And that amount has been carried forward to page 134, has it not?

A. It has.

Q. How did you arrive at the 17 per cent per annum shown at the foot of page 135?

A. That is shown on page 136.

Q. Yes.

A. Taking interest at eight per cent, depreciation at five per cent, maintenance at three per cent, and taxes at one per cent.

Q. Why did you use those per cents?

A. Well, in my opinion those figures are correct. Certainly a reasonable allowance for interest is eight per cent. Depreciation is about in accordance with the practice of the company, and in my opinion about what such a property requires. Maintenance is based on the actual performance. As a matter of fact it is somewhat less than the actual maintenance of the property for 1924.

Q. Now, you have prepared your study on the basis of two periods, have you not, namely, the so-called construction period and the development period?

A. Well, I have merged them all into one period of five years. I have assumed that the property can be built and the business acquired in a period of five years.

Q. But your so-called development period begins with what quarter?

A. Well, you mean the acquisition of subscribers?

Q. Yes.

A. Well, I have estimated that the subscribers will not [fol. 3014] be attached and any service begin until the twelfth quarter, but as a matter of fact I have assumed that the operating organization and many of the employees will be taken on at least a month or perhaps two months prior to the actual rendering of service. That thing is, of course, almost obvious, that you cannot begin an operation with an untrained personnel. You would have to secure their services one or two months prior to actually beginning operations.

And that is evidenced by the fact that the present practice of the company, before a girl is put on the switchboard, is to give her from two to four weeks actual training before she does any operating at all. That is just ordinary operating practice, and in the case of the reproduction of a large property, it would require the securing of certainly the major part of the operating force some weeks ahead of the beginning of operation.

Commissioner Marshall: Mr. Sloan, in running over your Exhibits yesterday, I recall, if I am correct about it, you had a million and a quarter approximately for that one item in your cost of going value; is that correct?

The Witness: It is—$1,218,100.00.

Commissioner Marshall: Something like that.

The Witness: Yes, sir, that was arrived at in this way. There are 12,181 employees that we considered would have to receive at least one month's salary prior to the beginning of operation. I have simply allowed them $100.00 a month for one month prior to the beginning of operation.

Chairman Marshall: Ought that not to be an operating expense? I was thinking of that yesterday when I was [fol. 3015] looking over your Exhibits.

The Witness: No, it would not.

Chairman Marshall: Wouldn't they be in the employment after the date of operation?

The Witness: Yes, they would, and after that date their salaries would be charged to operation, but it would certainly seem a reasonable assumption that they would be employed at least a month prior to the beginning of operation. That is the practice I have assumed.

Chairman Marshall: That is all.

Q. All expenditures up to the date of operation are capital expenditures?

A. Yes, that has been my theory in this preparation. As a matter of fact I do not think that any present employee in the operation of the telephone company could be brought up to their present operating skill and efficiency by the expenditure of $100.00. I think that is a very moderate allowance for a thing of that kind. My idea in this thing is that you have them there perhaps a month or six weeks before you start and you can get them at least partially broken in so that they will know what to do and how to proceed, but they certainly would not be brought up to their present operating efficiency by the expenditure of as small an amount as $100.00 a person.

Chairman Marshall: Mr. Sloan, while you are on that subject another item I noticed yesterday was that you had a material amount for advertising. Do you think in the reproduction value today they would have to spend that amount for advertising?

The Witness: It would be advertising.

[fol. 3016] Chairman Marshall: That is what you have got it in your Exhibit, isn't it?

The Witness: Yes, I have it under the title of "Advertising and soliciting." I took $4.00 a telephone as a matter of fact, which is based on the last few years' records for that purpose.

Q. Records for what?

A. For advertising and soliciting.

Q. But records of what?

A. Of the Ohio Bell Telephone. But here is the situation. That money is not necessarily expended for the purpose of getting the subscriber. It is more an educational

proposition, that is, you have to tell these people where to go and what kind of service they had best take. The commercial agents must explain the various characters of service that are being offered, and I think that a light amount of it is properly chargeable to the acquisition of business, but certainly a very substantial part of it would be educational. It is almost inconceivable that a property of this size could be put in operation without considerable newspaper publicity, and it is things of that kind that I have in mind by the inclusion of this item of advertising and soliciting.

Chairman Marshall: All right.

Mr. Burr: The questions of the Commissioner have anticipated some of the questions that I was about to ask you.

Chairman Marshall: Maybe I ought not to have interrupted?

Mr. Burr: I am very glad to have you do it, but I will [fol. 3017] go over it again briefly, if you please, even at the risk of slight repetition.

Q. We had arrived at the item of $15,579,363.00, for the fixed charges on the plant during the development period, and you had stated that that amount had been brought forward to the fourth line on page 134. The next figure above that amount on that page is "Forms and methods $50,000." Will you tell the Commission how you arrived at that amount?

A. That is somewhat of an estimate. It is based on this situation, however, that to operate a company of this size would require a complete set of books of all kinds and a very large stock of general routine forms. There are construction forms, maintenance forms, forms for subscribers' applications, and a- almost innumerable list of items of that character, without the use of which the business cannot be conducted. It would require a substantial stock of them to begin business.

Q. Does this $50,000 represent the cost of the printing and the paper and the carrying of them in stock?

A. Yes, and the development of some few of them. I have assumed as a matter of fact by reason of their relationship with the American Telephone & Telegraph Company, that the bulk of the drawing up of the forms and the designing of the forms would in general be supplied.

Q. So that the $50,000 only includes the developing and perfecting of a comparatively small number of forms?

A. Yes, and the laying in of a complete stock of such items.

Q. You answered in response to a question by Mr. Commissioner Marshall that the item above the $50,000, which [fol. 3018] appears as "training employees prior to operation, $1,218,100," represented 12,181 employees at $100.00 per employee. You also explained why you considered it necessary to pay those employees for a month's time prior to the operation of the property. How did you arrive at the particular number which you used, that is to say, 12,181 employees?

A. Well, that was determined by an actual investigation of the number of employees in the company now.

Q. You mean as of——

A. As of June 30th.

Q. 1925?

A. Yes.

Q. Reference has also been made to the advertising and soliciting shown on page 134 at $2,086,588.00. That, as I remember you, is not so much the advertising of the telephone business in the effort to secure subscribers as it is to acquaint subscribers with some of the information with respect to the business, which they must have.

A. Well, I would say—yes, the major part of it, perhaps as much as 70 or 80 per cent of it, would be for that very purpose. I am assuming in the reproduction that there would be a substantial demand for service and that the service does not have to be solicited to get it all. Of course, there is always a certain amount of business that you try to get by direct solicitation. And I have included that in the $4.00.

Q. That is to say, no matter how long your property has existed?

A. That is true today.

Q. How?

A. That is true today.

Q. How did you arrive at that particular amount for advertising and soliciting, namely, the $2,086,588.00?

A. By investigating the advertising and soliciting in the [fol. 3019] last few years per net station gained from the records of that company.

Q. That figure is based on the experience of the company?

A. Yes, as a matter of fact I think the figure came out $3.87, or something of that sort. I have forgotten the exact figure, but I rounded it off to $4.00, because I have made similar investigations in other places, and I understand it runs from three and a half to five and a half and six dollars a telephone.

Mr. McConnaughey: Where did you get it? From what accounts?

The Witness: I cannot give you the numbers. I can easily find it for you. I guess it is carried as an item of advertising and soliciting. I don't recall the account number for it.

Mr. Burr: Can you answer that, Mr. Schneider, from where you sit?

Mr. Schneider: In the commercial expenses of the company will be found amounts for advertising, canvassing and soliciting.

Q. There remains to be considered the item of $3,559,500.00, shown on page 134 as the operating expenses during the development period in excess of the expense which is normal to the telephones actually in service. In order to arrive at that amount reference must be first made to page 137 of your Exhibit; is that true?

A. That is correct.

Q. Will you please take up the discussion of that page and show the Commission how you arrived at that amount?

A. That figure was arrived at by a calculation made about [fol. 3020] as follows: In the same way that plant during any development period and as experienced from year to year at present is in excess of immediate requirements above a normal spare amount of plant, in the same way operating expenses would exceed the normal operating expenses.

I can explain it in this way. In each operating group, in each major operating group, in each major class of operating expense, which is commercial, traffic, general, maintenance and so forth, there is a portion of the expense which is fixed, more or less independent of the number of telephones. There is another portion of each major account of expense which fluctuates with the number of subscribers.

I can illustrate it by the traffic expense. The supervisory force would be more or less constant from month to month, regardless of the number of subscribers, whereas the number of operators, the girls who operate, would fluctuate in almost direct proportion to the load or the subscribers. So that I have divided the operating expenses into two portions, a fixed portion that is more or less independent of the number of subscribers, and a variable portion which fluctuates with the number of subscribers. And then I have estimated the number of subscribers that will be attached during each quarter. And, adding the variable portion, corresponding to that number of subscribers, to the fixed portion for each quarter, I arrive at the figure shown in the first column on page 137. The second column on that page represents the normal operating expenses per subscriber.

Q. Now, that is the normal operating expense per sub- [fol. 3021] scriber for the number of telephones connected?

A. Yes, that is right.

Mr. McConnaughey: Have you included in that any other items of expense except this supervisory item that you have mentioned?

The Witness: You mean in the fixed portion of the expense?

Mr. McConnaughey: Yes.

The Witness: Let us take one of those accounts and just show how we sub-divided it. We took the total operating expenses for 1924 by groups, that is, we took traffic, commercial, and so forth. Now, for instance, the total traffic expense for the year ending June 30th, 1925 was $7,109,-164.00. That is the total traffic expense. Now, we have divided it into this proportion. The supervision, inspection, clerical, schooling, stationery and printing and other traffic expenses may remain more or less fixed regardless of traffic. That amounts to $1,287,615.00. And the variable portion, which would be wages of girls, lunchroom expense, the power expense, and other miscellaneous expense, amounting to $5,821,000.00. So that the variable costs, varying with the number of phones, is $11.16 per telephone, and added to a fixed cost per quarter of—that is, per year—of $1,287,000.00. Now, we have divided the commercial and various other expenses in that same way.

Mr. Burr: Any other questions?

Mr. McConnaughey: No.

The Witness: I would like to suggest that that title in the second column on page 137 should read "Normal oper-
[fol. 3022] ating expense exclusive of maintenance, depreciation and property taxes for the number of telephones in service."

Mr. Burr: May we correct the Exhibit at this time?

Chairman Marshall: Yes.

Mr. Burr: There is no objection?

Mr. McConnaughey: None.

(The Exhibit was thereupon corrected.)

Q. Will you proceed with your discussion of page 137?

A. Then by subtracting the figures shown in the second column and the figures shown in the first column, I arrived at the figures shown in the last column on page 137, which totals $3,559,500.00.

Q. That amount has been carried forward to page——

A. That amount has been carried forward to page 134.

Q. 134?

A. Yes.

Q. And added together, the amounts on that page equal how much?

A. $22,493,351.00.

Q. That sum represents what?

A. That sum represents what to my own mind would be a normal reasonable amount for the cost of developing the past business of the company.

Q. To what extent do all of the amounts shown in your Exhibit under the heading of the cost of establishing business represent your judgment as to how the money would be expended, and what the resultant costs would be?

A. Well, they represent my best judgment after a very careful consideration of this whole problem. As a matter of fact, I have been engaged over a year on this study, and have given it very careful consideration, and in my opinion the figures we have arrived at are fair and reasonable.

[fol. 3023] Q. In discussing the matter of the per cent. condition of the property, I neglected to ask you whether or not you had determined the per cent. condition of the general equipment items, that is to say, the items of office furniture and fixtures, general stores equipment, general stable and garage equipment, miscellaneous tools and implements?

A. No, those figures took the same as—as I recall it, we used the company's figures for those, both for the new and depreciated. But in my inspection of the property I saw a considerable portion of this class of property, and it is in good operating condition, it is well maintained, and I think the per cent. conditions as used are very reasonable.

Mr. Burr: You may cross examine.

And thereupon a recess was had until 1:30 o'clock P. M. of same day (Wednesday, March 31st, 1926).

[fol. 3024] Morning Session

Tuesday, November 9, 1926.

And thereupon the further hearing of this matter was resumed, pursuant to adjournment, before Honorables Charles C. Marshall, Chairman, George T. Poor and Frank B. Maullar, Public Utilities Commissioners.

* * * * * * *

[fol. 3025] And also GEORGE B. WILLIAMS, recalled for further examination in chief, having been heretofore duly sworn, testified as follows:

Examined by Mr. Burr:

Q. Mr. Williams, you have been called for cross-examination, but it has been agreed that prior to your testimony in that respect, the net additions to the property of The Ohio Bell Telephone Company for the year ending June 30th, 1926, shall be placed in evidence. I call your attention to Williams' Exhibits number 17, 18, 19, 20 and 21, and will ask you to state what they are and the net additions as reflected in those exhibits?

A. Williams' Exhibit number 17 sets up the net additions of the property to be disposed of for the year ending June 30th, 1926. These are the so-called miscellaneous investments or the additions to land and buildings which were set up in the appraisal as of June 30th, 1925, as the property to be disposed of. Now to that particular property as listed in account 111 there has been added net additions to the extent of $40,982.83.

Q. That has been done to carry your appraisal through in the same form as originally prepared?

A. That is right; a set-up of all of the property under one heading or another as of June 30th, 1926.

Mr. McConnaughey: Is that item transferred from some other account in the previous inventory?

The Witness: No, sir; it appears in the same account; [fol. 3026] that is a similar item appears in the same account, but this particular item is the addition to the property, or it might have been transferred; that is it is partly a strict addition and partly a transfer from either 211 or 212. That is since the date of the last hearing the policy of the company has developed in some cases that there may have been property as of that date, the intention of which at that date was to use it, but that intention has been changed, and if that is the case in any instance, that particular property has been transferred from the 211 or 212 account to the 111 account.

By Mr. Burr:

Q. So that this figure of $40,982.83 represents, if I understand you, the net additions to the property of The Ohio Bell Telephone Company in account number 111 "Miscellaneous investments" for the year ending June 30th, 1926?

A. That is right.

Q. Proceed?

A. Now that particular amount has been rounded out to $40,983.00 even and is carried forward to Williams' Exhibit number 18 where it is added to the previous total of $195,710.00 as of June 30th, 1925.

This makes the new total for the property to be disposed of appearing in the last line of Williams' Exhibit number 18 as $236,693.00.

Q. Now this $40,983.00 again represents what?

A. It represents two things; first, the net additions—actual additions to the account 111. It transfers from accounts 211 and 212 to account 111.

Q. And where there have been any transfers from ac- [fol. 3027] counts 211 and 212 is that shown in the subsequent exhibits which will be offered; that is is the effect of it shown?

A. The effect of it is shown in the subsequent exhibits, yes, sir.

The next exhibit is Williams' Exhibit number 19 which sets up the net additions to the property exclusive of property to be disposed of for the year ending June 30th, 1926. The amounts shown on this exhibit are taken from the records of the company showing the actual net additions to each account for the year ending June 30th, 1926, and are set up in the same detail, that is by accounts, as the property appears in the appraisal.

Q. Now you say "taken from the records of the company;" what does that mean?

A. It means when the records of The Ohio Bell Telephone Company show the actual additions and deductions to its property on the basis of actual cost, in this particular case for the year ending June 30th, 1926, the net additions are the difference between the gross additions added and the property displaced.

Q. To what extent have you checked the records of the company for the correctness of the figures shown in your exhibits 18 to 21?

A. I have, from time to time, checked the various records of the company both during the time I was with the Public Utilities Commission and many times since I have been with the Central Union and The Ohio Bell Telephone Companies, and am satisfied that the accounts of the company are kept in accordance with the I. C. C. system of accounts and are properly kept.

[fol. 3028] Q. What about the correctness of these particular figures shown on exhibit number 19; what have you done to verify them?

A. Those figures have been checked to the various records of the company to satisfy ourselves that they are correct and accurate.

The first total appearing on Williams' Exhibit number 19 is indicated as "total net additions year ending June 30th, 1926," and the amount is $11,714,205.01. Now that is the total net addition for the year ending June 30th, 1926 with which we started.

Q. Wait a minute; read that again, please.

(Answer read.)

Q. Started when?

A. Started when we intended to make up the proper net addition figure to be applied to the appraisal as of June 30th, 1925. You will recollect that in the previous summary, as of June 30th, 1925, for the reproduction cost new of the property, exclusive of the property to be disposed of as shown in Williams' exhibit number 9, there appeared the item of "construction work in progress," being identified as item number 12 and amounting to $2,223,718.00. Now this was the construction work in progress as of June 30th, 1925. It is the intention in this set of exhibits now being presented to substitute for the construction work in progress as of June 30th, 1925, the construction work in progress as of June 30th, 1926.

You will note that on Williams' exhibit number 19 the first item is the item of construction work in progress amounting to $2,078,829.18.

[fol. 3029] Q. Now what do you mean by construction work in progress?

A. That is the work that is in the process of construction as of a given date, not yet cut into service.

Q. Does it appear anywhere else in your appraisal as of June 30th, 1926?

A. It does not. Now the item that I have just referred to of $2,078,829.18 is the net addition to the construction work in progress for the year ending June 30th, 1926, and in order to substitute the construction work in progress as of June 30th, 1926, it is first necessary to deduct from the net additions the amount of net addition for this particular item. This is done on Williams' exhibit number 19 in the first item following the total for the net additions as of June 30th, 1926. The item is identified under the heading of "Less", and reads "construction work in progress $2,078,829.18."

Now in order that there may be no interest during construction as a carrying charge on the construction work in progress I have also deducted the interest during construction appearing as a net addition for the year 1926. This is shown on Williams' exhibit number 19 first as the next to the last item before the first total, that is account 268 "Interest during construction" in amount $239,691.50. This amount is brought down under the construction work in progress, and the item of construction work in progress and the item of interest during construction are added to-

gether, carrying the total of $2,318,520.68 out under the previous total net addition of $11,714,205.01.

[fol. 3030] From the total just named, the sum of these two items is deducted, which leaves a balance of $9,395,684.33.

Now for the year ending June 30th, 1925, there were certain items of central office equipment which were not included in the appraisal but which appeared on the books of the company as net additions for the year ending June 30th, 1925.

In order to include these items which were used and useful property in furnishing service, I have added these net additions of $287,545.00 which is the figure at which they appear as net additions on the records of the company; also I have taken into consideration the effect of certain credits appearing in the net additions for the year ending June 30th, 1926, which credits were for property that had to be included in the appraisal up to June 30th, 1925.

Now inasmuch as the property had not been included in the appraisal, it of course, was not correct to include during the year 1926 any credit or reduction to that particular property in the appraisal.

So that while, in the net additions this credit of $23,719.72 appears, it is necessary to add back into the total this particular item inasmuch as I said it is on property that is not yet in the appraisal.

The sum of these two items of net additions of $287,545.00, and the credits added back in, amounting to $23,719.72, is $311,264.72.

This last named figure is added to the balance above of [fol. 3031] $9,395,684.33, making the total net additions to be added to the appraisal as of June 30th, 1925, of $9,706,949.05.

The next exhibit is Williams' exhibit number 20 which is a summary of the appraisal exclusive of property to be disposed of as of June 30th, 1926.

Q. How did you arrive at the amounts shown in exhibit number 20?

A. The total on Williams' exhibit number 20 down to and including the item of "Interest during construction" is $126,327,392.00 which is the same total as appears in the corresponding place on Williams' exhibit number 9, the latter exhibit being the summary of the property, reproduc-

tion cost new, exclusive of the property to be disposed of, as of June 30th, 1925.

I have next taken the net additions up to the end of June 30th, 1925, exactly as they appeared on Williams' exhibit number 9 and carried them forward to Williams' exhibit number 20 and item 6a, amounting to $167,807.00.

I have next taken as item 6b the net additions for the year ending June 30th, 1926, and carried them forward from Williams' exhibit number 19 to Williams' exhibit number 20 amounting to $9,706,949.00.

Mr. Dotson: Mr. Williams, calling your attention to the date at the bottom of exhibit number 19 "Appraisal as of June 30th, 1925," that appears on my sheet.

The Witness: That is right, and that is what it should be, the total on Williams' exhibit number 20, including the net additions just referred to, is $136,202,148.00. The bal- [fol. 3032] ance of the items on Williams' exhibit number 20 down to item number 12 "Construction work in progress" are taken from and are the same as they appear on Williams' exhibit number 9.

Now having eliminated the construction work in progress as a net addition from Williams' exhibit number 19, I now eliminate the construction work in progress as it appeared on Williams' exhibit number 9 and substitute therefor the construction work in progress as it appeared on the records of the company as of June 30th, 1926, in amount $4,302,547.00, appearing on line number 12 of Williams' exhibit number 20.

By Mr. Burr:

Q. What is construction work in progress?

A. Construction work in progress is the construction work that is in the process of completion. It has not yet been completed or put into service.

Q. Is that an item which exists always in the experience of the company?

A. Yes, it does; take a cross-section of the property of the company and you always find construction work in progress,—that is in any growing company such as The Ohio Bell Telephone Company. Now to my mind, it is similar for instance, to working capital and supplies. Working capital and supplies are in the store room. It is

necessary to have them in order to carry on the business of the company, and the construction work in progress is property that has been taken out of the supply rooms and supply yards and put it into the field and partly completed. It represents an investment of the company that is normal [fol. 3033] at all times in a growing company. And while that property does not go into service until later, still a cross-section of the company at any given time shows an investment in that particular type of property.

Q. If you don't include it in your appraisal what happens?

A. You are always behind just that much in regard to earning on your capital investment.

Q. Is the construction work in progress shown in your exhibit number 20 included or reflected in your appraisal in any other place?

A. No, it is not.

Q. There is no duplication?

A. There is not.

Q. Does it include interest during construction?

A. No. As I stated and showed on Williams' exhibit number 19, all of the interest during construction for the year 1926—for the year ending June 30th, 1926, has been eliminated from the net additions so that there is no interest during construction in this item of construction work in progress.

Q. What then does the amount shown for the grand total as $169,184,658.00 on your exhibit number 20, represent?

A. That represents my best judgment as the cost to reproduce new of the property of The Ohio Bell Telephone Company exclusive of the property to be disposed of as of June 30th, 1926.

Q. Will you take up and discuss next if you please, Williams' exhibit number 21?

A. On Williams' exhibit number 21 appear the total reproduction cost new of the property; the per cent condition of the physical property and the appraisal of physical prop- [fol. 3034] erty, present condition, at the same figures as they appear in Williams' exhibit number 11, being the figures for those respective items as of June 30th, 1925.

The next item on Williams' exhibit number 21 is the item of net additions shown in Williams' exhibit number 8, in

amount $167,807.00, being the net additions up to the end of June 30th, 1925.

The next item on Williams' exhibit number 21 is the item of net additions taken from Williams' exhibit number 19 amounting to $9,706,949.00 and being the net additions for the year ending June 30th, 1926.

The items of working capital including supplies and miscellaneous construction expenditures are brought forward from Williams' exhibit number 11, being the same as they were for June 30th, 1925.

The construction work in progress of $4,302,547.00 is the same item as appears on line 12 of Williams' exhibit number 20.

The cost of establishing the business appearing on Williams' exhibit number 21 is the same as it appears on Williams' exhibit number 11.

Q. That is to say the cost of establishing business has not been evaluated upon the increased value of the property as of June 30th, 1926?

A. That is right; there is no addition made for the cost of establishing business for the net addition to property amounting to nearly ten million dollars for the year ending June 30th, 1926.

[fol. 3035] The grand total appearing on Williams' exhibit number 21 is $156,397,019.00.

Q. Which represents what?

A. Which represents my best judgment as to the cost of the property in present condition of The Ohio Bell Telephone Company exclusive of the property to be disposed of as of June 30, 1926.

Mr. Burr: We offer in evidence Williams' exhibits 17 to 21 inclusive.

Chairman Marshall: They may be admitted.

And thereupon the documents last above referred to are admitted in evidence on behalf of The Ohio Bell Telephone Company and are herewith submitted and marked respectively Williams' exhibits 17, 18, 19, 20 and 21.

Cross-examination.

By Mr. McConnaughey:

Q. Mr. Williams in your exhibit number 19, account number 268, "Interest during construction $239,691.50," what

is it under the uniform system of accounting that goes into that account on the books of the company?

A. My recollection is that it is the proper amount for interest on the construction work in progress or on the plant and the property in the process of construction up until the time that it is cut into service.

Q. Upon what is it based; how do you get at the amount?

A. Why, my recollection is that the Auditor takes the [fol. 3036] average amount of construction work in progress as between the first and the last of each month and applies to that a given interest rate.

Q. What is that interest rate?

A. I think it is 6%.

Q. And that item 268, as it appears in this exhibit, is the total of such charges during the year preceding June 30th, 1926?

A. To that account; that is right; yes, sir.

Q. When you deduct that, as you do as I understand it, along with the construction work in progress from the total of the net additions, you intend to eliminate that item from these net additions altogether?

A. That is right.

Q. And the element of construction work in progress—or the element of interest during construction as applied to construction work in progress is then finally eliminated from your exhibit 21 in the same way I understand?

A. Both 20 and 21; that is right.

Q. Then your set-up includes no provision; or does not include any item to cover interest during construction excepting your item number 6 in exhibit number 9, $7,481,264.00?

A. That is right; the same item appearing on exhibit number 20.

Q. And you add nothing to any of your over-heads on account of these additions in your final set-up; is that correct?

A. I make no addition specifically, beyond what may have been included in the net additions as a part of the net additions themselves during the time that they were being [fol. 3037] installed and added to the property.

Q. But as to the item of interest during construction there is not anything added?

A. That is correct.

Q. At all?

A. That is right.

Mr. Burr: May I ask him a question if you are going to leave this subject?

Mr. McConnaughey: Yes.

Redirect examination.

By Mr. Burr:

Q. Calling your attention again to the matter of interest during construction in your Williams' exhibit number 20, you have, under subhead 5, the item of interest during construction, have you not?

A. On the property in the appraisal, yes, sir.

Q. And that is the $7,481,264.00 and it represents what?

A. The interest during construction on the particular property appearing in the appraisal as of June 30th, 1925.

Q. And you are not disclaiming any right to include that item in the appraisal?

A. No, sir.

Q. Now the interest during construction which you have eliminated applies only to what?

A. To the net additions for the year ending June 30th, 1926.

Q. And again, why have you eliminated it from that item?

A. In order that we may have appearing in the net additions no item for interest during construction on the property during the time that it was in the process of [fol. 3038] construction.

Q. That is to say on the property represented by the item "Construction work in progress"?

A. That is right.

Mr. Burr: That is all.

Recross-examination.

By Mr. McConnaughey:

Q. And why didn't you want anything to appear in that item?

A. My reason for that was that it is my understanding that the Commission, in the past, has rather not favored the inclusion of construction work in progress on the theory that if an appraisal were brought up to a later date at

some subsequent time, if there were included in the item, or along with the construction work in progress, the item of interest during construction, there would be somewhat of a duplication between the carrying charges of interest during construction as it was later priced out, and the item of net additions including interest during construction, if it were included at a previous time.

Q. Now do you think the way this is set up in exhibit number 19, that there would be any duplication there? In other words, is your item of $7,481,000.00 in your exhibit number 20 any part of, either directly or indirectly, of the item "Interest during construction" in exhibit number 19, $239,691.00?

A. If the appraisal were brought up-to-date later, it might include some small duplication in the way of engineering and such items, if those items were not taken out at the [fol. 3039] later date. But I have eliminated what would be by far the larger bulk of any possible duplication by taking out the interest during construction.

Q. Now Mr. Williams,——

A. Mr. McConnaughey, may I just make this statement; that in any case the possible situation that you spoke of is not here present, and that I think we would really be entitled to claim that interest during construction if we so desired at the present time, and by not including it, the appraisal is conservative to just that amount.

Q. This figure of $239,691.50 represents a total of all the charges during the year to that account; that is correct as you stated a while ago?

A. Yes, sir.

Q. That includes interest not only on the $2,078,000.00, or even your four million dollar figure of construction work in progress at the end of the year, but all of this final balance of nine million dollars that went into service during the year, doesn't it?

A. It includes interest on any items that were outstanding during the year, and a part of those items which were so outstanding are the items that are still included in the construction work in progress, and a part of them are the items that have been passed into the net additions; that is right.

Q. Have gone into service and commenced to earn?

A. That is right.

Q. Now Mr. Williams, I want to ask you some questions

with reference to your previous testimony; testifying with reference to central office equipment prices on page 526 of [fol. 3040] your testimony, you testified that the material prices that you have used in appraising central office equipment are taken from the price lists of the various companies that furnish that equipment to you including the Western Electric Company and other companies. In making up your unit prices have you used the prices given in the price lists for individual units of property that enter into the various central offices that you have appraised?

A. That was our intention all the way through, yes, sir.

Q. That is you have made an inventory in considerable detail of the elements that enter into that central office equipment and have applied to each individual item, as far as the material is concerned, the price that you find for that item in the price lists?

A. That is right.

Q. Is that the way those materials are priced to the company upon an order for instance, for the equipment of a central office entire?

A. It is my recollection that they are priced to the company in considerable detail. Now whether it is precisely the same detail as we used or not, I do not know.

Q. In pricing—and when I say "pricing" I mean in giving you the figure which the company is to pay for the equipment of a central office, does the Western Electric Company bill the material at the same prices as the prices which you used in your inventory or in your appraisal, I mean?

A. Well, if we bought property as of the same date, they would, yes, sir.

Q. Not making any allowance for the fact that they were [fol. 3041] furnishing to you a complete equipment for a central office instead of individual items as they appear in the price lists?

A. No, sir; there is no allowance made on that that I ever heard of.

Q. So that you do not get the benefit of any combination of a great number of elements of the same kind when you buy a complete equipment of that kind?

A. No, sir; the stuff is priced on the same basis as it is in the price lists in order that we may be able to check that those prices have been used.

Q. So that in the case of an order such as you gave us an example of in your exhibit number 15, it should be possible to check the items in that order with the items in the Forrest Exchange at Toledo, should it?

A. It may not be possible to check that particular bill, item by item, because we know that there is more detail in the office than appears on this bill. However, knowing the detail in the office, we can price that out with the prices appearing on the price lists and check any total figure that the company may have for an assembly of items.

Q. Now Williams' exhibit number 15 to which I referred is an exhibit which you produced in response to a request that you furnish us with a typical order and record of the filling of the order to the Western Electric Company, and the order which you produced was an order for manual central office equipment in the Forrest Exchange office at Toledo; can you say whether or not that order represents the complete equipment of the Forrest Exchange in Toledo [fol. 3042] as it is at the present time?

A. I cannot, but it would be my assumption that it would not.

Q. Can you identify any of the items in that order with any of the items in your appraisal of the Forrest Exchange in Toledo?

A. I can identify, for instance, the items of the framework; the item of cabling; the item of power apparatus; but whether those are specifically the same items and in the same detail as they appear in the appraisal, I doubt it very much.

Q. Is there any combination of items in your exhibit number 15 that is comparable with any combination of items in your appraisal?

A. The items that I just named are comparable to items in the appraisal, but they are not comparable in precisely the same amounts.

Q. So that it would not be possible to check any figures in the two different statements?

A. I would be very much surprised if it would.

Q. Now on page 536 of the record you referred to central office equipment construction totaling $1,750,000.00 which you had checked and analyzed for the purpose of working up your unit costs on central office equipment. There seems to be a little confusion in the record there as to that amount.

You say $1,750,000.00 at the end of the first paragraph and in the middle of the next paragraph the figure is $1,250,000.00; which is correct?

A. May I refer to the record in order to find out exactly what I said about those two items?

Q. Sure; I assumed you had it before you.

[fol. 3043] A. No, sir. I have not a copy. It will be necessary for me to refer back to some other records that I have not here at present in order to tell which one of those figures is correct and I will be glad to do that if you want me to.

Q. Well, I wish you would. I assume that that total of $1,750,000.00 or $1,250,000.00, whatever it is, included a certain number of definite jobs in that construction involving central office equipment?

A. That is right.

Q. What jobs were those—page 536?

A. I think I have placed in the record a considerable amount of testimony relative to the particular jobs, identifying them in detail.

Q. I do not recall any such testimony and I have not found it in the record.

A. I may be mistaken but I am pretty sure it is in there. But I will give you the testimony.

Q. Well, now while you are doing that, can you give us—those various jobs are identified by a work order in the records, are they not—work order number or something of that sort?

A. Yes.

Q. Well, can you give us the work order number, the amount of construction involved, the location and the time with reference to each one of those jobs?

A. At the present time and from the information available here I can give you all of that information with the exception of the estimate number. However, I will be glad to furnish the estimate number or any other information you or Mr. Hagenah may want at any time.

[fol. 3044] Q. All right; go ahead and identify the various jobs as well as you can from the records you have here?

A. The Akron Main job, placed during the years 1923 and 1924.

The Toledo Forrest job placed——

Q. What amount was involved in them?

A. In the Akron Main, $176,053.00.

The Toledo Forrest job, placed during the years 1923 and 1924, in amount $54,523.00; The Toledo Navarre job, placed during the same time, $37,761.00; The Cleveland Lakewood job, placed during 1923, amounting to $88,162.00; The Cleveland Fairmont job, placed during 1923 and 1924, in amount $112,628.00; The Cleveland main Cherry job, placed during 1923, amounting to $100,986.00; The Cleveland Hemlock job, placed during the same year, amounting to $56,080.00; The Cleveland Lincoln job, placed during 1923 and 1924, amounting to $46,887.00; The Cleveland Broadway job, placed during 1923, amounting to $41,105.00; The Cleveland Glenville-Eddy job, placed during 1923 and 1924, amounting to $149,432.00; The Columbus Garfield job, placed during 1921, amounting to $78,205.00; The Willoughby job, placed during 1923 and 1924, amounting to [fol. 3045] $13,887.00; The Alliance job, placed during 1922, amounting to $49,729.00; The Washington Court House job, placed during 1922, amounting to $32,711.00; The automatic equipment at Alliance, placed in 1922, amounting to $90,093.00; The automatic equipment at Washington Court House, placed in 1922, amounting to $54,859.00.

That is all of the detail that I have here on that.

Now in addition to that there were some other jobs considered and analyzed but which, owing to some factors involved in each job, such for instance, as smaller installation or abnormal costs or some reason or other, were thrown out. They were analyzed and went into the total of the amount of property analyzed, whether it was $1,750,000.00 or $1,250,000.00, but it is my recollection that those were all the jobs included in what we call our proof test.

Q. These figures that you have given, are they the cost of the total completed job including both labor and materials?

A. They are.

Q. Now how did you study or analyze those costs in order to arrive at your unit costs?

A. We took into consideration the amount expended for material——

Q. That is shown——

A. Separately in each case; also we had shown separately the installing labor, the installing material, the manufacturer's detail costs, the freight and cartage and

contingencies. We found the percentage relation of each [fol. 3046] of those items to material cost and compared it with what those costs had been running for similar types of installation during the past six or seven or eight years and came to the conclusion as to whether a particular job represented a normal cost or not, for that type of construction; that is we based the costs under consideration—or rather we compared the costs under consideration with previous installations of similar types of equipment in order to determine whether the costs were normal or whether there was something considerably out of line.

Q. Where did you get the cost of previous jobs; by a similar study in previous cases?

A. Yes; we have been doing this same thing for nine or ten years.

Q. As to central office equipment, did you have as an original basis any time study set or tentative unit costs?

A. No, sir.

Q. You did have such a set-up with reference to some of the other classes of construction, did you not?

A. Back originally a good many years ago we did.

Q. Now you will get for us and put in the record later the estimate numbers for each of these jobs you have mentioned which you say you analyzed will you?

A. Yes.

Q. Now as you have testified, your labor cost for central office equipment in uniformly 37% of the material cost; is that correct?

A. That is the average obtained and applied in each case for the common battery, manual, and machine switching installations; yes, sir.

Q. Have you used any other figure with reference to [fol. 3047] other types of equipment?

A. As I stated, we have used a very much less figure than that in regard to the installation or magneto offices, which offices are installed by our own company.

Q. What is the figure which you used with reference to magneto offices?

A. It is my recollection that that is 10%.

Q. 10% for the entire labor cost on a magneto switch board?

A. Yes.

Q. Now how did you arrive at this 37%?

A. I arrived at that by finding the percentage relation of the payment for labor to the payment for material as shown by the bills for these particular offices.

Q. Did they all show 37% relation?

A. They did not.

Q. Well, how did you get that figure?

A. I took the total expended for material for the particular offices under consideration and the total expended for labor and found the average percentage relation or the percentage relation between the totals.

Q. What were those totals?

A. Those totals were for material $699,157.00 and for labor $258,733.00.

Q. Now I wish you would go through that list of jobs that you have given us and tell us which of those represented new construction and which were additions or changes of construction already existing—exchanges already existing?

A. That all represented either new construction entirely or additions of major units—these several sections.

[fol. 3048] Q. Which represented new construction entirely?

A. I am unable to tell you that from the information I have at hand.

Q. Can you get that?

A. I can get it, yes.

Q. Do you know of any one of them that is an entirely new exchange from beginning to end or from top to bottom or inside to outside, from your knowledge of the property?

A. From my recollection at the present time I could not tell you. It is my thought, though, and my recollection that there are part of them that were entirely new installations, but I wouldn't want to be positive on that until I refreshed my memory.

Q. Look that up, will you?

A. Yes.

Q. Now how did you get at the other items of your cost with reference to these jobs?

A. Precisely in the same manner as we did our installing labor; we had the detail of each of those items for each job. We added up all of the costs for all of the different jobs for each particular item and referred that total to the material cost total, obtaining the percentage relation in each case.

Q. And what was the percentage for freight?

A. The percentage for freight was 1%.

Q. And what were the figures; what was the total cost; you have already given the material cost; what was the total of freight?

A. $7,408.00.

Q. What was th amount of the Western Electric Company's engineering charges?

A. $54,393.00.

Q. And what per cent is that?

A. That was 7.8%.

[fol. 3049] Q. Mr. Williams, does the sheet that you are looking at show, in tabulated form the various details of all these various jobs you have testified to?

A. Yes, but they were not used precisely as I have them here.

Q. May I look at that sheet?

A. Yes.

Q. Mr. Williams, would you produce for the record a copy of this sheet that you have shown me in your work paper as part of your evidence?

A. I will produce for the record a copy of that sheet in the part that is essential to what I used. As I said I modified that and there are other things that I used that do not appear on the sheet.

Q. Well, we want the complete story, whatever else you used?

A. I will give you anything that I used, but to give you a copy of this sheet might be misleading.

Q. What is there on that sheet that you have not used?

A. There is a duplication, for instance, in this item between Willoughby, Alliance and Washington Court House.

Q. Well, you have those classified as small exchanges?

A. Yes.

Q. And they are also included in the larger list of large and small exchanges?

A. That is right.

Q. Where have you drawn the line between a large and a small exchange?

A. Well, the line is not definitely drawn. It is simply the amount of the total installation that there would be in the exchange.

Q. Well, on this sheet it shows the labor cost of the small exchanges 34.7% as against 37% in the total; how do you explain that difference?

[fol. 3050] A. That is just the way the installation labor happened to come out; that on the smaller exchanges the jobs were not so complicated; there was not so much complicated equipment in it and the installation did not require so much labor. However, the 37% is the per cent relation for labor of all jobs including the small jobs.

Q. Now the exhibit which I am asking you to produce shows in separate columns the estimate number, the total material, the installation labor, the installation material, the Western Electric engineering, freight and cartage, contingencies, and the total in separate columns for each one of these jobs?

A. That is right; and in connection with that I want to say that I overlooked my hand on one thing when I told you. I did not have the estimate number. I was looking for it back here.

Q. Now you say you have not used the remaining figures on this sheet in arriving at your percentages?

A. No, but I may have used other figures in addition to the ones that are on this sheet.

Q. Now on your central office equipment your labor factor was 37%, wasn't it?

A. That is right.

Q. Your installation material was 1.5%; whereas your percentage as shown by your totals here was 1.6%?

A. That is right.

Q. And your Western Electric engineering, your percentage as shown here was 7.8% and you have used 7.5%?

A. That is right.

[fol. 3051] Q. And your freight and cartage is shown here as 1.1% of the material and you have used 1%?

A. That is right.

Q. And your contingencies check exactly, that is it shows 1% and you have used 1%?

A. That is right.

Q. And your total percentage as you figure it is 48.5% and you have used a flat 48%?

A. Yes, sir.

Q. And those figures you can give us in an exhibit with those details?

A. Yes, I can give you a copy of that.

Q. All right; when can we have that, Mr. Williams?

A. I can give it to you in the morning.

Q. All right. On page 546 of the record, Mr. Williams,

you were talking about cross-arms and I wonder if there is an error there; "Give the reason for the classification of the property as classified in your appraisal?" "Ans. Taking the exchange pole lines as a typical example, I have set up here the poles by heights only and the average classing for each height and the cross-arms by average height," should that be "length"?

A. That is right; I noticed that in my copy.

Q. Now in connection with the pricing of the cross-arms it does not seem to me that the record is quite clear as to whether you have added anything to your units on account of associated items with reference to cross-arms; what is the fact as to that? Have you your work papers with reference to your units on cross-arms?

[fol. 3052] A. I think I have sufficient data here. There has been included what we consider the proper amount for braces of different kinds in connection with cross-arms.

Q. Pins?

A. Well, pins come with the cross-arms.

Q. As a part of the cross-arms?

A. Yes.

Q. Tell us how you arrived at your prices on the cross-arms?

A. The prices on the cross-arms—do you mean labor?

Q. The whole thing—the unit you used?

A. Material of course, was taken from the price lists of the manufacturer. The labor costs were obtained by pricing out the detail for the pole lines as we took them in the detail exchange inventories for poles, cross-arms and miscellaneous material, on the basis of a tentative set of unit costs, and then comparing the total arrived at with the total obtained from the estimate completion reports for the same items, and obtaining a percentage factor to either increase or decrease the tentative labor costs. That percentage factor was then applied to each of the tentative labor costs, so that when the items contained in the estimate completion reports were priced out again, on the revised labor costs, that would come out to exactly the same actual cost as contained in the estimate completion reports.

Q. Those estimate completion reports were for pole line construction estimates?

A. That is right.

Q. And you separatod the items, the details of those vari-

ous reports which had to do with cross-arms, to get this figure, did you?

A. We had a number of cross-arms in each one of these [fol. 3053] estimate completion reports.

Q. And you had a unit price for labor—tentative price for labor?

A. That is right.

Q. Where did you get that price?

A. That came from our last set-up of labor costs which, in this case, were our Youngstown labor costs.

Q. What do you mean by your last set-up of labor costs?

A. We are making labor costs from time to time in connection with each of our exchange cases—or have been in the past, and each time we make a set of labor costs, unless we have some particular reason to modify some special items, we use the previous labor costs or the costs which we used in a previous exchange rate case. By that means we keep up-to-date our labor costs, both as reflecting wage scale changes and efficiency changes.

Q. You have no separate figures from the pole line construction study that you were able to make that apply to the cross-arms?

A. Not in the——

Q. I mean in these jobs you checked up in order to get at your costs?

A. Not in regard to the item of exchange cross-arms. We had in the item of toll cross-arms. As I testified in my direct testimony we were able to obtain actual costs on something over ten thousand toll cross-arms for the labor items.

Q. Now what was your labor cost—installing labor cost on the cross-arms?

A. Do you mean the final?

Q. Yes?

A. $1.63.

Q. How did you arrive at the average size that you have [fol. 3054] used in this case; what is the average size, ten feet?

A. Ten foot, 10 pin, yes, sir; by pricing out the detail contained in the exchange inventories, getting the total amount of money for all of that detail including the various sizes and types and what little miscellaneous material there was, and dividing the number of cross-arms into that and comparing

that average unit with the nearest actual cost of a particular size cross-arm as of a particular date.

Q. The date was June 30th, 1925, I understand?

A. Not for that purpose, no. The date that we used for the purpose I think was about a year or so prior to that, as I explained in my direct testimony.

Q. I don't think you made that explanation with reference to cross-arms; you did make it with reference to poles?

A. Yes.

Q. You took the total amount that is included in the various inventories that you have mentioned in your exhibit number 14; is that correct?

A. Not precisely, because that list on exhibit number 14 contains inventories made subsequent to the date that we made up our prices. It is substantially correct, but there are some inventories listed there that were not included in this set-up for pricing purposes.

Q. When did you make up your prices?

A. The prices were made up, if I recollect correctly, about January, 1926.

Q. And those inventories that you used were made all [fol. 3055] the way from 1919 down to 1926?

A. No; they were made down to——

Q. Including some in 1925?

A. I think there were some in 1925, yes.

Q. Was there any change in the price of cross-arms during that period?

A. There was probably some change but not a substantial change.

Q. Did the cross-arms appear—the material cost of cross-arms appear at different figures in those different inventories according to the market price of cross-arms at the time?

A. Oh, no; we did not take the appraisal figures; we took the inventory figures and summarized them on all the exchanges and priced them all out on the same basis of cost.

Q. And what basis of cost did you use; that is not what you said in your direct examination if I understood you?

A. I am sure I did; I drew attention to that once specifically, that I summarized and priced all on the same basis.

Q. Then you got nothing but the number of cross-arms——

A. And kind.

Q. And kind; that is the size would be the principal item as to the kind, wouldn't it?

A. The size.

Q. And number of pins?

A. Yes.

Q. And what price did you apply to them?

A. That is what I am trying to figure, at what exact date that was. It is my recollection that the prices applied were prices current in 1924 about.

[fol. 3056] Q. Well, you applied the price in 1924 to the various sizes and classes of cross-arms as they appeared in these various inventories, and that study included the number of cross-arms that appeared in all the inventories I assume of all these different classes?

A. Yes.

Q. So that the result was weighed by the number of cross-arms of the different classes?

A. That is right.

Q. And you divided the price by the number and that gave you the average price?

A. I divided the total amount by the number and that gave me the average price; that is right.

Q. And you classified all of the cross-arms as ten foot cross-arms because the price that you got—the average price that you got in that way was nearest to the average price of a ten foot ten pin cross-arm, is that correct?

A. That is right.

And thereupon a recess was taken until 1:30 o'clock P. M. of same day.

[fol. 3057] Tuesday Afternoon Session

November 9, 1926.

And also GEORGE B. WILLIAMS, resuming the stand for further cross-examination, continued his testimony as follows:

Cross-examined.

By Mr. McConnaughey:

Q. Mr. Williams, how many cross arms did you find in the inventories that you checked against?

A. That is, in the exchange inventories?

Q. Yes; that is what we are talking about right now.

A. 253,249.

Q. 253,249?

A. That is correct.

Q. And what was the total value of them as you determined it by pricing out in the manner that you have described?

A. You mean the total labor value?

Q. No, the total value.

A .Well, I haven't that figure here for both labor and material. Now, the total of material value was $450,139.00.

Q. Now, that you obtained by pricing out the various sizes and styles of cross arms at the tentative unit prices that you had developed up to that time for those different classes of cross arms; is that correct?

A. That is correct.

Q. And that figure, $450,139 you divide by 253,249, to get the average price?

A. To get the average material price, yes.

Q. That was how much?

A. I haven't that figure here.

[fol. 3058] Q. Didn't you give it this morning?

A. Not for material.

Q. What was the figure you gave here this morning?

A. I gave you an average labor cost.

Q. Haven't you your work papers on that particular item?

A. Yes, but my working sheets here relate particularly to labor.

Q. How did you determine this average ten pin figure which you have used?

A. That was determined by comparing the average material cost for all of the items, all of the cross-arms, in the exchange inventories, with the cost of a specific cross arm, that is a tenpin cross arm.

Q. Now, that figure, that average figure, you are not able to give us at this time.

— I think I may be able to give it right here in just a moment. That was $1.76.

Q. $1.76. And what was the price of a ten pin. ten foot, fir cross arm?

A. I don't believe that I have that material price here, Mr. McConnaughey.

Q. What was the material price that you used——
A. The final?
Q. As final?
A. $1.79.
Q. $1.79?
A. Yes, sir.
Q. Why did you use that price?
A. $1.79.
Q. Yes.
A. Because that was the price for that particular type of cross arm, including miscellaneous material, as of June 30th, 1925.
Q. What you are not able to tell is the price of a cross arm of that size and style as of sometime in 1924, at which you fix these prices?
A. The tentative costs. I haven't that figure here, but [fol. 3059] I can get it for you.
Q. Will you get that?
A. Yes, sir.
Q. How much of that $1.79 refers to associated items?
A. Three and one half cents.
Q. Now, you base this determination of the price, $1.76, that you have just testified to, on 253,249 cross arms shown by these inventories.

Mr. Postle: 253,000.

Q. 253,000, yes.
A. 253,249, yes, sir.
Q. What was the total number of cross arms in the property as of June 30th, 1925 of all sizes and styles?
A. Well, the class of property comparable to that which we are discussing, that is, exchange pole lines, $264,910.00.
Q. Do you mean to say that that is the number of cross arms that there were in the system?
A. As of June 30th, 1925.
Q. Yes.
A. Yes, sir.
Q. That includes all sizes and kinds?
A. Yes, sir.
Q. How did you get to your labor cost on the cross arms, Mr. Williams?
A. I took the tentative unit cost for labor and applied it——
Q. Which was what?

A. The tentative cost was $1.48.

Q. Well, what did you do with that?

A. We applied the increasing factor obtained in estimate completion reports of 1.065, which give us a unit cost for the cross arm of $1.577. To that we added——

Q. How did you get that increasing factor of 1.065?

A. We got that by pricing out, as I said previously, all [fol. 3060] of the items contained in the estimate completion reports on the tentative set of unit costs, and comparing that with the total money actually expended on those estimates; we found that the percentage relation was this 1.065.

Q. And what estimate completion reports were those?

A. There is quite a number of them, Mr. McConnaughey. They amounted to a total of over $736,000.

Q. $736,000 of exchange pole line?

A. Costs, yes.

Q. That $736,000 is the total of labor and materials for the entire pole line installation?

A. Yes, sir, in these estimates.

Q. Out of that you take for this purpose the cross arm cost?

A. We did not pick out the cross arms. What we did was to price out those materials on those estimates on the tentative examination, that is, both poles and cross arms, which was the total tentative amount of money as compared with the expenditures as shown in those estimates.

Q. How did you get the tentative value of the cross arms out of that sort of calculation?

A. Simply taking the number of cross arms that there were in there and pricing them on the tentative costs, just the same way as we got the individual prices for each height of pole, that is, the thing hinged on the percentage relation.

Q. Where did you get these tentative costs that you used?

A. Those were the Youngstown costs that I referred to.

Q. Now, what was the tentative cost? Was that this figure of $1.48?

A. That is right.

Q. That was your adjusted figure?

A. No.

[fol. 3061] Q. That is right; 1.48 was your Youngstown figure?

A. That is right.

Q. That is, that is a percentage, 1.48 per cent?

A. No, $1.48.

Q. $1.48 per arm?

A. Per cross arm, yes, sir.

Q. And that you increased by the increasing factor of 1.065, which made what?

A. Which made 1.577.

Q. As I understand you, that was because the entire labor cost on that whole mass of exchange pole line installation was 1.065 per cent—no, that is not right—6.5 per cent higher than the tentative cost that you had applied in working that out; is that right?

A. Yes, on the same items of material.

Q. That is, the percentage was based on the amount of material. Is that it? What do you mean by the same items of material?

A. I mean by that, pricing out on the tentative study of costs the same material as was obtained in the estimate completion reports.

Q. Didn't you price out all of the material?

A. All of the material contained in the estimate completion reports.

Q. Yes, that is what I mean.

A. Yes, that is right.

Q. Was there any other material that was priced out?

A. That was in the estimate completion reports?

Q. Yes.

A. No

Q. Why do you distinguish there as you do?

A. I am not distinguishing. I am just trying to keep the matter clear, and the reason I am, I thought you might have in mind all of the material in the exchange inventories [fol. 3062] which, of course, we did not price out. We priced out the material only in the estimate completion reports.

Q. Oh, I understand that; just exactly what were these Youngstown units that you have mentioned several times?

A. The Youngstown units were a set of units that were used in the Youngstown case. Those units were the result of a previous set of units, tentative units, to which had been applied another proof test similar to the one I have

made in the company wide case, and so on back. In each case there was a tentative set of units used, which were the final units in a previous case, and to that tentative unit a proof test was applied. How many of those proof tests have been made in the last seven or eight years I do not know. But the Youngstown unit costs are the final results of all of those proof tests made in order to supply units for a particular case, and used for a subsequent case, because they furnished the most up-to-date set of tentative unit costs that I could get.

Q. Why were they used in this case?

A. Because I felt that they represented unit costs that were reasonable to start with as a tentative basis, which could be modified in accordance with the proof test, as I have done, to give the proper unit costs for the company-wide case.

Q. They happened to be the last set of unit costs which you had proof tested in this way prior to this valuation; is that correct?

A. It is, yes, sir.

Q. Now, Mr. Williams, on page 548 of the record, in reference to poles, I want to ask if there should not be a correction made in line 14. I will ask you if in line 14 on page [fol. 3063] 548, where the word "class" appears for the second time in that line, if that word should not be height?

A. Yes, sir.

Q. Now, Mr. Williams, you say in that answer, of which that line which I have just quoted is a part, in reference to your method of financing minor items in the exchange pole lines, that you have used about $1,730,000 worth of pole line equipment, including both major and minor items, which you have priced out in full detail. That is correct, it it not? That is, that is what you did?

A. That was to obtain the average amount of miscellaneous material.

Q. Well, first, to obtain the classification of the poles?

A. Well, we did not price out the miscellaneous material in order to obtain the classification of poles.

Q. That is because I have those two things confused there. You did, however, price that out in order to get a basis for your miscellen-ous material factor?

A. That is right.

Q. Now, you went through those same poles, as I understand it, in order to classify your poles; is that correct?

A. That is right.

Q. And you took finally every tenth pole for the study of your classification?

A. No, sir.

Q. What did you do?

A. That testimony which you have before you refers to a special study that I made to substantiate my classification of poles as derived from the exchange inventories. My testimony there, if I recollect correctly, was to the effect that I had used the poles in the exchange inventories to arrive at the average class.

Q. Now, how did you use them?

A. By pricing out all of the poles in a given height, [fol. 3064] dividing the money so obtained by the number of poles in that height and getting the average price per pole, comparing that average price per pole with the different prices for the different classes in that particular height, in order to determine which one of the classes it may be nearest to. As I was saying, I had done that for each of the poles, and in order to determine the sufficiency of the data, for doing that I selected the exchange inventories on some eight or ten of the larger exchanges, and priced out every tenth pole in detail, and then priced out every pole in detail, and arrived at the average class by the two different methods, and found out that the average class on the every tenth pole was practically the same as it was by using all of the detail; that is, in other words, it was a ten per cent check. And inasmuch as I had, if I remember correctly, from sixty or seventy per cent of the poles in the exchange territory in the company wide, I felt if ten per cent would substantiate that, certainly I had enough information in the exchange inventory as a whole.

Q. On page 549, you say in the company wide appraisal as represented in Williams' 7-B, there are a total of 422,142 poles, that you had the major and minor item details from the actual field inventories on 415,950 poles, or, in other words, better than 99 per cent?

A. That is right.

Q. You had then as I understand it the data for a detailed inventory and pricing of better than 99 per cent of these poles?

A. On the poles I did. On some of the other accounts I [fol. 3065] had I think 60 to 70, but it ran between 60 and

70 per cent on the one hand and a hundred per cent on the other.

Q. How did you finally obtain the price that you had applied to your poles? I think you used the 30 foot average class C as an example in your previous testimony, and your price per pole there is $24.80. How did you get that figure?

A. I took the material item for the pole alone from the price lists. I added to that——

Q. What was that price?

A. The bare pole price I haven't here. The reason I haven't it was because I prepared for cross examination on that part of the costs which came from the Youngstown costs, and I have mainly the labor costs. That was the part that came from the Youngstown costs. Now, I have mainly labor costs here. The cost of the pole itself, plus the freight and supply expense, was 8.676. I take it up at that point here, but I haven't the rest you ask me for with me.

Q. Eight dollars what?

A. 67.6 cents.

Q. And the difference between that and $24.80 is what?

A. First, $1.52 for the miscellaneous material, covering such items as pole steps, pole setting and brackets. That brings the material item up to $10.196. Then the item for labor for this particular height of pole of $12.016 for the major item, that is, the pole, $2.602 for this miscellaneous material; making a total for labor of $14.618; added to the material item of $10.196 gives me $24.814, and we rounded that out to $24.80 even.

[fol. 3066] Q. How did you get that labor item of $12.016 and $2.602? Take the larger item first.

A. My preliminary unit cost from Youngstown was $12.071. My increasing factor, which I have already testified to, was obtained by a comparison with the estimate completion report costs, and was 1.065, as I have already said, and, applying that to the $12.071, gave me $12.856. Deducting 84 cents per pole for the effect of the earth boring machine, gives me $12.016.

Q. How did you get that 84 cents for the effect of the earth boring machine?

A. I made a study, based on what information I could get as to the experience of the company in the use of that earth boring machine. That showed me that there was a savings

of $2.20 per pole to those poles upon which the earth boring machine could be used. My estimate was that it could be used for 38 per cent of the total number of the poles in the property, and that, taking 38 per cent of the $2.20, gave 83.6 cents. Now, that 88 per cent is based on an estimate that the earth boring machine could be used on 50 per cent of the toll poles and 33 1/3 per cent of all of the exchange poles in the company wide inventory. Now, I took into consideration that the use of this machine could not be universal as applied to all of the poles in the property. For instance, within the municipalities, we would have such conditions as small towns where there was not sufficient work to warrant the removal of the earth boring machine to that particular locality; places where we had in some instances a paved street that it would not be advisable to [fol. 3067] use it on; crowded conditions next to buildings, scattered localities in some cases where it would not be wise to move the earth boring machine a considerable distance in order to get to those localities; and so on. Now, on the outside of municipalities we have certain cases, such as certain private rights of way, over hills and through woods, that it would be uneconomical to attempt to move the machine. Some places where we have bad roads, which might make it uneconomical to attempt to bring the machine there. Places along deep ditches. Places where they have bad rock digging conditions, marshy soil; and then the matter of scattered locations within the city. Now, taking all of that into consideration, I came to these estimates of 50 per cent of toll poles and 33 1/3 per cent of exchange poles, and then worked out my 84 cents per pole.

Q. Do you use the difference of 84 cents for poles on the exchange and toll lines?

A. I used it on every pole within the company inventory.

Q. These various obstacles in the way of using your machine that you have mentioned, the poles that are affected by those considerations are not a matter of record, are they?

A. No, sir. It is a matter of my familiarity with the property in general and my judgment based on it.

Q. That is a judgment purely?

A. It is.

Q. Now, your final figure then for labor on the major item of your pole is $12.016; is that correct?

A. Yes.

Q. Now that you have stated—is your labor cost of the 30,000 class C poles, have you applied the same labor cost to all of the poles?

A. To all of the thirty foot poles.

Q. Have you a different labor cost for each of the other [fol. 3068] classes of poles?

A. For each of the other height pole?

Q. For each of the other height pole, I mean?

A. Yes, sir.

Q. How do you get the 2.602, which you have applied as a labor factor on these items?

A. I priced out all of the miscellaneous items in those exchange inventories that we have been referring to, covering such items as anchors, guys, butt stubbing, painting, butt treating, and so forth, having the number of each one of those items in these exchange inventories on the tentative basis of unit costs, and for each particular item I came to an average cost per item, that is, taking into consideration all of the different kinds of anchors, of which I had the number of each kind, I priced out that number of each kind and its particular unit cost came to a total; divided it by the total number of anchors of all kinds, and came to an average cost per anchor for all anchors. Then I applied that same increasing factor of 1.065 to this average cost, which gave me the cost on the company-wide basis. Then I found out what fraction of a unit of each of these items there was per pole by taking the total number of items, for instance, in anchors, taking the total number of anchors and dividing it by the total number of poles, I got the fraction of a unit of anchors per pole; multiplying this fraction of unit of anchors per pole by the cost per anchor, I got the value or cost per fraction of a unit per pole. Now, I did that on each one of the different items, starting off in each case with all of this detailed information in the exchange inventories, and adding all of those up together, I came to 2.062 as being the average [fol. 3069] cost for the average amount of all of the miscellaneous items per pole.

Q. That is, that is the average labor cost connected with those items?

A. Yes, sir.

Q. As against the material cost of $1.52?

A. That is right.

Q. Then the only figure that is the same throughout all

of these different heights of poles is your increasing factor of 1.065?

A. The increasing factor of 1.065 is the same throughout the different heights of poles, and also the cost for both labor and material for miscellaneous items is the same throughout the different heights of poles, because those costs for miscellaneous items were attained by dividing the total number of poles into the miscellaneous items and getting the average cost per pole, so that that figure obtained in the way I have stated should be loaded on each of the poles the same, that is, the miscellaneous item itself.

Q. Well, you have increased your labor as applied to the major item of material by the same increasing factor?

A. That is right.

Q. You make no distinction at all with reference to that, and that is a constant figure throughout all of these different poles?

A. That is right, and, of course, the reason for that is, that there were miscellaneous items both in the exchange inventories and in the estimate completion reports just the same as there were major items in the exchange inventories and in the estimate completion reports.

Q. Of course, there was a difference in the material cost on these different classes and sizes of poles?

A. Oh yes.

[fol. 3070] Q. Was there any variation in the labor cost in your Youngstown units?

A. Oh yes.

Q. That you started with as a basis?

A. Yes, sir, they were in what was my judgment a proper relation to each other according to the different heights of poles.

Q. That is, it would cost more in labor to install a 75 foot pole than it would a 15 foot pole?

A. Oh yes, of course.

Q. That is all adjusted and taken into consideration in these various units?

A. That is right.

Q. Well now, your Youngstown unit on that thirty foot average class C pole was $12.071; that is correct, isn't it? I think that is what you said a moment ago. I am just trying to identify the figure?

A. That is right.

Q. Now, will you give the corresponding figure from your Youngstown units as to each one of the classes of poles that are listed on page 2 of your Exhibit 7-B, Williams' Exhibit 7-B?

A. 15 foot pole, $6.032; 18 foot pole, $6.364; 20 foot pole, $6.90; 22 foot pole, $7.012; 25 foot, pole, $8.192; 30 foot pole, $12.071; 35 foot pole, $15.254; 40 foot, $18.106; 45 foot pole, $21.555; 50 foot pole, $25.237; 55 foot pole, $27.482; 60 foot pole, $34.488; 65 foot pole, $39.876; 70 foot pole, $43.109; 75 foot pole, $48.159; 80 foot pole, $57.256; 107 foot pole, $87.337.

Q. In the Youngstown unit you have made a deduction from those figures in each instance of 84 cents on account of the use of boring machine?

A. Yes, sir.

Q. Now, the figure produced by deducting the 84 cents [fol. 3071] from those figures you have just read is the figure that you have increased by this increasing factor of 1.065?

A. I first increased my tentative cost by the increasing factor, to find out what the cost would be on the basis of the actual costs taken from the estimate completion reports if I had not used the effect of the earth boring machine. Then I took out this amount for the earth boring machine, showing what it would be after giving effect to the earth boring machine.

Q. The final result is just what I have stated?

A. Yes. There was a question in my mind—there was a doubt which seemed to raise the question whether the 84 cents for the earth boring machine should not also be affected by this factor.

Q. Well, I did not intend that. How did you arrive at this increasing factor of 1.065? When I say "how" I mean to ask you to give us the figures you used in coming to that result, not simply the principle followed?

A. The total direct labor, obtained by pricing out the items included in the estimate completion reports on the basis of the tentative costs, was $186,089.00. The actual money expended, as taken from the estimate completion reports for the corresponding items, was $192,470.00. The incidentals, supervision and tool expense, loaded into the Youngstown tentative costs, was $72,570.00, giving a total of the tentative unit cost basis for those items included in the estimate completion reports of $258,664.00. The load-

ing on to the direct labor costs as taken from the estimate completion reports for incidentals, plant supervision and [fol. 3072] tool expense was $83,724.00, giving a total of $276,194.00. Now, comparing this last named figure with what we got by pricing out on the tentative unit cost basis, $258,664.00, gives us this relation of 1.065, or rather it gave us a relation of 1.068, and I rounded that down to 1.065.

Q. These estimate completion reports that you used, what estimates were they, what work was covered by them, when was it done, and what was the character of the job that was done, with the amounts involved in it?

A. There are several dozens of those estimates in the years——

Q. I will ask you to state for the record just exactly what you mean by an estimate completion report?

A. That is the completion report covering the particular estimate showing the expenditures for each of the different items of labor, material, incidentals, sundries, and so forth.

Q. Well, the estimate identifies the job, the work estimate?

A. The estimate number identifies the job.

Q. Yes, the estimate number, that is, a specific item of work that is to be done, and the completion report is the result of carrying that out?

A. It is the result of the expenditure made on that particular item, yes.

Q. Will you state what those various items were and give us the various information?

A. That would be very hard to do from the information that I have at hand, for the reason that this information is shown on several sheets according to the height of poles, and some of the estimates may appear on some of the sheets and not on the others.

Q. What is the difference, Mr. Williams, between a specific [fol. 3073] item and a routine estimate?

A. Why the amount of money involved. A specific estimate takes down—authorizes the expenditure of money down to a certain amount.

Q. Can you give us the amount?

A. I think that is in the record in this case.

Q. I think it is, too. I was just trying to recall it in this connection. $1,500, isn't it?

A. I don't know for sure. I can find out. It is $2,500.

Q. And anything less than that is called a routine estimate?

A. Yes, sir.

Q. What amount of these estimates we have used here are routine and what are the specific estimates under that classification in terms of dollars or work performed as to each class?

A. The total of the specific estimates is $125,321. The total of the routine estimates was $611,210.00. The percentage relation of expenditure of labor to material in each of them, that is, the specific and the routine, being just about the same.

Q. Is that correct? You gave us a total there of something over $700,000. The total you were talking about a moment ago was only $192,000. Are you talking about the same thing you were talking about awhile ago? Now, I am asking you about exchange pole lines.

A. I don't recollect that $192,000 figure. The figure that I referred to awhile ago was a labor figure only. The last figures that I gave was the total of all expenditures from the estimate completion reports.

Q. This is all exchange pole lines?

A. Oh yes, sir.

Q. Can you tell how much of that labor of $192,470.00 is from specific estimates and how much from routine estimates?

[fol. 3074] A. From specific there was $40,186.00; from routine there was $152,274.00.

Q. Over what period of time do these estimates which you use for your basis of study here extend, Mr. Williams?

A. They extend from in 1922 to and including 1924, and in most cases the results obtained from the estimates in the period just named were substantiated by the results of placing costs during the year 1925.

Q. What was the largest job that is included in the list of estimates that you have before you?

A. The largest individual job was one of $15,733.00.

Q. $15,733.00. That included the setting of how many poles?

A. I couldn't tell you without summarizing a lot of the information here.

Q. What is the smallest of any of those estimates?

A. I think four or five hundred dollars.

Q. How many of those items did you say—or did you give the number—are specific estimates?

A. I didn't give the number. I gave the amount of money.

Q. Can you give it in number readily?

A. I should estimate there were about 40 or 50 of the specific estimates.

Q. Now, Mr. Williams, your supply expense estimate is four per cent of the material, running all the way through and applying to all items of physical property, as I understand?

A. That is correct.

Q. And that you base upon the total amount charged to construction for supply expense in the year 1924?

A. Not the total amount. The total amount, or the balance left after making a deduction for the item of supply [fol. 3075] adjustment, a part of which I felt might be properly included, and a part of which should not be included, and not having the division between the part which should be included and the part which should not, eliminated the total supply adjustment.

Q. What was that total?

A. Of supply adjustment?

Q. Yes.

A. $198,969.00.

Q. $198,969.00?

A. Yes, sir.

Q. And the final figure, $331,724.00, is 3.65 per cent of $9,088,077.00; now is that $9,000,000 the total amount spent for construction materials of all kinds in the year 1924?

A. No, we had total material used for the year 1924 $9,581,000.00. To that we added the undistributed freight and cartage, amounting to $124,104.00, for the reason that our freight or our supply expense rather—for the reason that our supply expense is applied to the material, including the freight, and, of course, the percentage should be derived on the same basis. Also I subtracted from that total that I have named of $9,705,104.00, central office material, on which supply expense was not loaded, to the amount of $617,027.00, leaving this balance which you have referred to of $9,088,077.00.

Q. Why is not central office equipment included in that total?

A. Because that is the central office equipment that the

Western Electric furnishes, and we do not have the handling of it. We do not have to store it. They ship it right direct and install it.

Q. Now, you have based your study of your pole line costs, exchange pole line costs, as you say on page 557, on $881,000.00 of actual pole line construction costs; is that the total of these estimates that we have been asking you about?

[fol. 3076] A. No, sir.

Q. What is that figure?

A. That figure is $736,531.00. Now, the reason for the difference there is that subsequent to the making up of this detailed study and arriving at the actual costs used, I considered the construction costs for pole lines placed in 1925 in order to substantiate this statement or to see whether there had been any considerable change in pole line costs subsequent.

Q. You studied that much additional construction over your $736,000?

A. Yes, sir.

Q. Near the bottom of page 557, in the second line of the last paragraph on that page, the figure 88,000 is used in the record?

A. 881,000—yes, I corrected my copy.

Q. Are there any other items besides central office equipment to which that supply expense would not apply?

A. That is the only item in this material used item to which it would not apply. Of course, it does not apply to land nor buildings, items of that kind.

Q. No.

A. But that is the only item in this material used item to which it does not apply.

Q. Now, in your inventory of cable, exchange aerial cable, I understand that this inventory is made up on the basis of the actual number of feet of each size of cable; is that correct? There has not been any averaging process there similar to what was carried out in the poles, in the pole inventory, first.

A. The inventory included in the appraisal upon page 3 of Williams' Exhibit No. 7-B is the actual evidence of the different sizes and kinds of cable, taken directly from the inventories.

[fol. 3077] Q. Now, you base your study of exchange

aerial cable on actual construction cost as you say of $818,721.00 worth of work done, partly prior to and partly subsequent to June 30th, 1925. What estimates were included in that figure of $818,721.00?

A. Well, in the first place, of that $800,000 figure, there was some $400,000 of work that was done in the year 1925, and which was used only to substantiate the detailed analysis of costs, upon which the unit costs themselves were based. Now, the amount that was actually used in the proof test itself was $417,038.00.

—. What jobs did that include or what estimates?

A. You have the same situation in regard to cable that you have in regard to poles, that there are several dozens in the estimates.

Q. What amount of that was routine estimates and what amount was specific estimates?

A. It is my recollection that there were no routine estimates included in this. They are all specific.

Q. All specific?

A. Yes, sir.

Q. Can you tell how many there were?

A. 58.

Q. What is the largest amount that is involved in any one of them?

A. $26,457.

Q. What is the smallest?

A. They run down to about three or four hundred dollars.

Q. Now, in working up these costs, I understand that you started, as you had in these other estimates, by applying your Youngstown units to the quantities that you have set forth here?

A. Not to the quantities set——

Q. No, I mean that you found in these different jobs?

A. That is right.

[fol. 3078] Q. And then made an adjustment by multiplying by some factor. Was it an increasing factor in this instance?

A. No, it was a decreasing factor, the relation being .955.

Q. .955? Now, how did you arrive at that? Give me not only your method but the figures that you used?

A. The labor obtained by pricing out on the Youngstown tentative unit cost for the cable amounted to $39,613.00. The

amount for miscellaneous item of dips, grounds, bonds and so forth, was $3,605.00. The messenger was $14,784.00, and the installing labor for terminals and equipment was $2,491.00; making a total of $60,693.00. The loading for plant supervision and tool expense and incidental items was for the latter $9,074.00 and for the former $15,123.00, making a total of $84,690.00. The actual direct labor used from the estimate completion reports was $57,250.00. The amount for incidentals was $10,878.00 and for plant supervision and tool expense was $12,881.00, making a $81,010.00, which, compared with the $84,690, arrived at by using the tentative unit costs on the same items, gave a percentage relation or rather a factor of .9565, and we used .955.

Q. That factor you used applied to all of the different items in your exchange aerial cable appraisal; that is correct, is it?

A. That is right.

Q. Now, with reference to exchange aerial wire, as shown, commencing on page 9 of Williams' Exhibit 7-B, how did you get those prices? You stated at the top of page 567 the labor costs were gotten from the analysis of the actual construction costs experienced by the Ohio Bell Telephone Company for a period partly prior to and partly subsequent [fol. 3079] to June 30, 1925, and covered the actual construction cost of exchange aerial wire to the extent of $587,561.00. Now, what estimates were included in that $587,561.00?

A. The estimates for the years 1922, 1923 and 1924, covering the actual costs of construction of aerial wire for those years.

Q. And they amounted to a total of $587,561.00?

A. The figure that I gave here is $586,563.00.

Q. How were they divided as between routine and specific estimates?

A. The specific estimates amounted to $15,713.00 and the routine estimates to $570,850.00.

Q. How many estimates were involved there approximately?

A. The routine I could not tell you, because I only have them totaled by six months periods. In the specific there were probably around 28 or 30 estimates.

Q. Covering those three years?

A. That is right.

Q. How much of exchange aerial wire was strung during these years? What proportion of the total does this figure represent? Or have you used all of the work of that kind that was done?

A. No, I did not use all of it. I used all of it that I felt would represent normal costs, and if there was something that show-d excessive cost on account of some particular condition, that was eliminated. But as regards the amount —you mean as compared with what is in the company wide?

Q. Yes.

A. There was an amount that was equal to about 17 per cent of the totals in the company wide.

Q. But you are not able to state what proportion of the amount that was actually strung during those three — was [fol. 3080] represented there or how much you did not take into consideration?

A. No, but I would say this, that the amount that was not taken into consideration was probably small.

Q. Now, did you proceed in the same way with reference to this item that you did with reference to the pole and cable?

A. Yes, sir.

Q. Will you state the process, using the figures that you used and the results that you got?

A. By pricing out the amounts contained in the estimate completion reports on the tentative unit cost basis, I got for direct labor $139,934.00 for miscellaneous items, such as dips, aerial conduit, and bridles, $4,898.00; for incidentals $36,208.00; and for supervision and tool expense, $36,208.00; making a total on that tentative cost basis of $217,248.00.

Mr. Postle: Are your incidentals and your plant supervision the same, that is, the $36,208.00?

The Witness: They are precisely the same, the same percentage on those. From the estimate completion reports, showing the actual cost, I got for the same items $182,385.00, direct labor, incidentals $41,949.00, and the loading for plant supervision and tool expense was $41,037.00, making a total of $265,371.00, or a percentage relation to the tentative cost basis of 1.222, and I used 1.22.

Q. And that you applied to all of the costs throughout?

A. For the exchange aerial line wire, yes, sir.

Q. Now, I assume that the labor cost varied with reference to each of the items that you set forth here?

A. It did.

Q. Whatever it was, you increased it by the application [fol. 3081] of this increasing factor of 1.222?

A. 1.22.

Q. Going back for a moment to your exchange aerial cable, you used something over $400,000 of work done in 1925 for checking purposes. What was the result of your checking with those 1925 prices?

A. Well, I have not the detail here, I am certain that the check on that substantiated what I had already set up.

Q. You did not make any change in your figures based on the 1924 results because of what you found in 1925?

A. No, I did not, and I know that if I had found a change to justify it, I would have made it.

Q. Now, with reference to drop wires, I think there is a little error on 568, and I want to call your attention to it. First, at the top of the page there is an exchange of sentences between question and answer between you and me in which the word price is used several times, where I think size is intended. Can you verify that?

A. I probably could if I could see the record. It ought to be size all the way through.

Q. Also on that same page, we are talking about, "I also had available from the actual record the installation of it says "two drops." That should be "new drops," shouldn't it?

A. That is right.

Mr. Burr: In line 18. That is on page 568.

Q. The drop wires, as I understand it from what you have said on page 568, is worked out to an average basis similar to what you used in considering the poles. Is that correct?

A. I don't believe so. I think my testimony on that is to the effect that the drop costs were taken from the actual costs of installations for the first eleven months of 1925, [fol. 3082] the number of new installations being 47012, and the amount of money expended therefor being $189,878. In that connection it was not necessary to make a set-up on a basis of tentative costs for the reason that we had such a large number of new drops installed in the year 1925, for which we had the actual costs. Those items, that is, the

drop items, being kept separate from anything else in our records, and an actual cost being readily ascertainable.

Q. Then that figure is based upon actual costs in the year 1925; is that correct?

A. That is correct.

Q. Now, you base the length of drops on information available for the year 1924. With all this information available in 1925, why did you use 1924 figures to get the length?

A. I did not base that length on 1924. I derived a length from the 1924 measurements, and my recollection was that that was in response to one of your questions, asking for the length of drops. In reply to that question I stated that we had available information taken some years prior on several thousand drops, but that we had also available the lengths or the amount of wire used in drops for the year 1924, and that being much more recent information, I submitted that rather than the old information which had been taken before. However, I was not able to obtain at the time I made up my unit costs the amount of wire disbursed in connection with the 1925 drops. Now, the drop length obtained from the 1924 disbursements was merely in order to furnish the drop length. The costs, however, were based on the 1925 disbursements of both money and material.

Q. Was there a difference in length between 1924 and [fol. 3083] 1925?

A. I don't think there was.

Q. Just so I may not be estopped by remaining silent, I want to say that the record shows that you volunteered that information. But that is not important.

A. I think I volunteered it at the time, I did, but I had in mind your previous question.

Q. Now, Mr. Williams, in arriving at the cost of the drop wires, I wonder if any account has been taken of the prospective saving testified to by Mr. Rhodes by the use of a new type of drop wires, he saying on page 1047 of his testimony that a saving of $1.33 per thousand feet was expected by the use of this drop wire?

A. Before I answer that question, may I ask, do you know whether Mr. Rhodes' based that savings on the first cost or on the savings in the matter of annual charges for depreciation?

Q. I don't recall, and I haven't that page of his testimony here. But the statement that he made was that that would

be the result. I do not see how it makes any particular difference.

A. I have in mind two points in that connection. One of them is that my latest information is that there is very little saving in the first direct cost as between the twist wire and the new type, which is the one covering over both wires. Also I was pricing out the material that was in the inventory.

Q. Yes.

A. Of course, that new wire was not in the inventory.

Q. So that that saving is not reflected then in this figure?

A. No, I felt that it had not materialized and I would not [fol. 3084] be justified in including it.

Q. Now, as a matter of fact did you think about it at all in making up the valuation?

A. Yes.

Q. You thought of this boring machine?

A. I not only thought of it at the time, but I have considered it since, and in connection with that consideration the information came to me that there was little saving in original cost.

Q. My recollection is that Mr. Rhodes' testimony was that the saving was due to the shorter length of wire that was required, total length of wire.

A. I do not see how that would be possible.

Q. Well, he said there was a saving in the fact that it was straight rather than twisted?

A. Well, pardon me, the wire itself would probably be a shorter wire. That is true.

Q. It is also lighter, is it not?

A. Pardon me.

Q. It is also a lighter wire, is it not?

A. I think that it is.

Q. Now, coming to the matter of conduit, your appraisal and inventory on page 11, commencing on page 11, lists various sizes of main line conduit. Have you given there the number of feet of each size and style of conduit?

A. Yes, sir.

Q. Making the classification according to the number of ducts?

A. Yes, sir.

Q. There isn't any arriving at an average type for the purpose of the inventory there similar to the pole inventory, is there?

A. There is in arriving at the average type of duct formation. The quantities in the inventory here are the actual quantities of each size of duct run, but as the formations [fol. 3085] vary throughout the state in different duct runs, the price applied here is for the average duct formation.

Q. Just what do you mean by that?

A. Well, take a typical example. In a six duct run, you may have that conduit either laid three high and two wide or two high and three wide. Now, when we took our exchange inventories, we took the actual duct formation in each inventory in the various exchanges in the state. Now, it would be obviously a very large job to price that stuff out all according to specific duct formation, so that we took the average by pricing out the quantities under each size of duct run of each duct formation and got a price that was nearest to a particular duct formation.

Q. Is there a difference between duct in your chosen example of a six duct run, whether it is three high and two wide or two high and three wide?

A. There is.

Q. A difference in the price of material?

A. Not in price of material—price of labor.

Q. Price of labor in laying?

A. Yes, that is right.

Q. And you have attempted to adjust that price so as to apply the same labor cost to every six run duct for example in the system; is that correct?

A. Every six duct run of a particular type of conduit—for every six duct run of multiple conduit?

Q. Yes.

A. Yes, that is right.

Q. But aside from that there isn't any averaging of types to make your inventory?

A. That is right.

Q. I call you attention to the word "transformation" in the last line of page 572, and ask you if that should not be [fol. 3086] "formation" instead of "transformation"?

A. That is right.

Q. On page 573, you are discussing the minor items of associated items in connection with conduit, and you use a figure of 2.07 per cent. That, I assume, is to be figured in dollars. What was your loading on your unit price of conduit for the associated items?

A. The loading factor for the miscellaneous items was $.016. That would be 1.6 cents.

Q. On page 573 you say your answer to a question by Mr. Burr: "In this connection the minor items of associated items bear a relatively small per cent. to the major items. From computations there is 2.07 per cent." "Question: 2.07 per cent. of what?" "Answer: 2.07 per cent. of the major items." "Question: That is to say, the minor items are that proportion of the major items?" "Answer: Correct." Now, what does that 2.07 per cent. mean there as compared with your figure of 1.6 per cent. which you now use, or 1.6 cents?

A. That means that the 2.7 per cent——

Q. 1.07?

A. 2.07 was a percentage of the miscellaneous items to the major items, derived from the exchange inventories and stated in terms of percentage.

Q. Percentage of dollars?

A. No, percentage of——

Q. There is no other standard or unit of measurement that is common to both, is there?

A. I think that is in percentage of dollars. Just one moment please. That would be in percentage of dollars; the total miscellaneous items costs to the total major item costs are expressed in that percentage.

Q. And that amounts to 1.6 cents?

A. No, that amounts to that two and a fraction per cent. there.

[fol. 3087] Q. Oh, yes.

A. Now, if I did not make any deduction, that is, if I did not eliminate any of those miscellaneous items, it should correspond to this 1.6 cents per trench foot. However, that two per cent. item is a relation to the total underground system cost. The 1.6 cents as related to the trench foot cost is only the trench feet of subsidiary conduit, because that is the only thing to which it was related. In other words, I got this 1.6 cents by taking the quantities of miscellaneous items, such as risers and so forth in the exchange inventory, and the amount of money for them, and dividing the total trench feet of subsidiary conduit into the amount of money for these miscellaneous items, and it gave me this 1.6 cents per foot to be loaded on to each trench foot of subsidiary conduit.

Q. What was the cost per trench foot with which you

were comparing these associated items to get your per cent.?

A. I could not give you that definitely now, for the reason that that was an average cost, if I used a trench foot cost at all, but as I said a moment ago, that was simply a comparison of the total amount of money for the miscellaneous items with the total amount of money for major items, and it was not reduced to trench foot basis at all.

Q. It seems to have no connection with anything coming before or going after, as stated here; you say your purpose in stating that was to show the volume of associated items as compared with conduit; is that it?

A. It was in this connection, that throughout my direct testimony, I gave the percentage roughly at least of the cost of associated items with major items, in order to show that [fol. 3088] the pricing of the major items and the listing of the major items in the inventory was sufficient, and it was not necessary to go ahead and list all of these thousands of minor items on account of the relatively small cost.

Q. Well now, you arrived at your cost of conduit—this refers to exchange underground conduit—by a study, by an analysis, of actual construction costs of over $700,000 partly prior to and partly subsequent to June 30th, 1925. Will you tell what estimates you studied in order to arrive at this result?

A. The major portion of that $700,000 was placed in 1925, and it was considered, this major portion, only in connection with the substantiation of the proof test upon which the unit cost was based, and which proof tests included $276,624.00.

Q. How much of that $276,000——

A. $276,000, yes, sir.

Q. Was in specific estimates and how much in routine estimates?

A. It is my recollection that there is no routine included in that, that it is all specific.

Q. All specific?

A. Yes, sir.

Q. Have you a list of the jobs there?

A. Yes. I have.

Q. What is the largest one? How much money does it involve?

A. $82,085.00.

Q. What is the smallest one?

A. About three or four hundred dollars.

Q. How many of them are there?

A. About 50 of them.

Q. Now, that was proof tested, as you proof tested the other items that you have testified to, was it?

A. That is right.

[fol. 3089] Q. Will you go through that process, stating the figures that you used and the results that you arrived at?

A. The total direct labor obtained by pricing out quantities contained in the estimate completion reports on the tentative unit cost basis amounted to $112,370.00. The loading for incidentals was $22,474.00 and for supervision and tool expense $28,092.00, making a total of $162,936.00. The total direct labor taken from the actual costs in the estimate completion reports was $139,708.00; the incidentals were $13,842.00, and the supervision and tool expense was $6,287.00; making a total of $159,837.00, which, compared with the amount derived on the tentative unit cost basis of $162,936.00, gave a percentage relation of 98.1 per cent.

Q. On that factor you applied to the labor throughout all of the different items of the exchange underground appraisal, did you?

A. Yes, sir, we applied 98 per cent. even, Mr. McConnaughey.

Q. And the material and the labor costs varied according to the size of the various ducts, did they?

A. Yes, sir.

And thereupon the further hearing of this matter was adjourned to Wednesday Morning, November 10th, 1926, at 10:00 o'clock.

[fol. 3090] Morning Session

Wednesday, November 10, 1926.

And also GEORGE B. WILLIAMS, resuming the stand, having been duly sworn, continued his testimony as follows:

Re-direct examination.

By Mr. Burr:

Mr. McConnaughey: Before we start, do you want to put something in, Mr. Burr?

Mr. Burr: Yes.

By Mr. Burr:

Q. At one of the hearings the Telephone Company was asked to produce a statement showing the paving actually cut and placed by the Telephone Company as against the amount of present paving over conduits; Mr. Williams, have you prepared an exhibit containing that information?

A. I have.

Mr. Burr: It may be marked for identification Williams' exhibit number 16, pages 1 to 9 inclusive, and is offered in evidence.

Chairman Marshall: It may be admitted.

And thereupon the document above referred to is admitted in evidence on behalf of the Ohio Bell Telephone Company and is herewith submitted and marked Williams' Exhibit Number 16.

[fol. 3091] Q. Calling your attention first to page 1 entitled "Comparison of R. C. N. of original and present paving over conduit, "will you please tell the Commission the source of the amounts shown on that page?

A. The amounts shown on that page, taking up first the column headed "Original paving" come from the second page of the exhibit showing in detail the square yards, the unit costs and the amounts for each of the different types of paving; the quantities of paving for the original paving and also for the present paving, and the difference for each type of paving are shown on pages three and four for the main conduit; the amounts of money for the original and present paving——

Mr. McConnaughey: Just a moment; have you explained what you mean by the term "original and present paving?" I cannot get your evidence without that.

The Witness: I have not explained it so far. What I mean by original paving is the original paving cut through at the time the conduit was laid.

By Mr. Burr:

Q. Cut through by whom?

A. By the Ohio Bell Telephone Company or its predecessors installing the conduit. The present paving is the paving that existed over the conduit as of June 30th, 1925,

the date of the inventory, and corresponding with the paving shown in the company-wide appraisal as of that date. It was my understanding that you desired a statement of the original paving cut through, and an evaluation of that [fol. 3092] paving as against the total present paving that exists or did exist as of June 30th, 1925.

Q. When you say "original paving cut through," do you mean original paving cut through and afterwards replaced by the Ohio Bell Telephone Company and its predecessors?

A. That is right.

Q. Proceed.

A. On page 5 of the exhibit we set up the original paving and the present paving both in terms of money and in terms of square yards, this particular page referring to the paving over manholes.

On page 6 is set up another statement showing the present paving and the original paving over manholes in terms of square yards only and the difference in square yards.

The next page sets up the paving over subsidiary conduit for the original paving and the present paving both in terms of square yards and in terms of money.

Q. That is page 7, is it?

A. That is right. Pages 8 and 9 set up the paving over subsidiary conduit both in terms of original paving and in terms of present paving, in terms of square yards only, and the difference in square yards between the original paving and the present paving for each type of paving.

These quantities for the original paving were obtained by several weeks of investigation of the records of the company by a considerable number of men working under my supervision, and in most instances, we were able to obtain [fol. 3093] the quantities of paving or the type of paving directly from the records.

In some cases, having the date of installation of the conduit, it was necessary to go to the records of the city engineers in the various cities in order to obtain the type of paving cut through. In some other instances, there being no record in the official files of the Telephone Company as to the date of installation or the type of paving, it was necessary to refer to memoranda or personal information from employees. The major part, by far, of the paving though, was obtained from the first two sources mentioned.

Mr. Burr: You may cross-examine.

Recross-examination.

By Mr. McConnaughey:

Q. Mr. Williams, I understand that you have not changed the total of the amount of paving that is included in your company-wide appraisal or inventory?

A. That is right.

Q. Or the unit prices or the total cost, but you have simply divided the entire amount into these two classes of what was cut through and what was not actually cut through?

A. No, that is not right. The quantities for the present paving are the same as appear in the inventory. The quantities for the original paving are the quantities that existed at the time of the conduit installation over the [fol. 3094] conduit at that time. In other words, there was less paving cut through at the time of the installation of the conduit than there was at the time of the making of the appraisal as of June 30th, 1925.

Mr. Burr: Wait a minute; I think that answer is not quite the way you mean it. I think he is obscuring the point a little.

Mr. McConnaughey: Of course, we might suggest that he is the one to do the answering.

Mr. Burr: Well, as far as I am concerned I understand what he means, but I do not think the answer is as clear as he can make it, and I have you in mind when I suggest that.

By Mr. McConnaughey:

Q. All right, George, having been instructed, go ahead and make it clear.

Mr. Burr: Read his answer, please.

(Answer read.)

The Witness: That is exactly the way I want it.

Mr. Burr: Do you use the word "was" in the sense of existed?

The Witness: Which "was" do you mean?

Mr. Burr: The second one; in other words, there was not any paving cut through at the time of the appraisal, was there?

The Witness: No; only on the reproduction theory, that is all; that would have been cut through provided it had been reproduced at that date.

[fol. 3095] By Mr. McConnaughey:

Q. That is, the entire amount of paving that you show in your inventory would have been cut through on your theory if the property were reproduced?

A. That is right.

Q. Or on anybody's theory as far as that is concerned; and what you have done is to separate from the total amount of paving that you show in your inventory the amount that you found actually had been cut through by the company; is that correct?

A. I have not separated, and that is the reason I made that explanation a while ago. I went back and got the original paving. I did not separate anything from what I had in the inventory. This is a separate and distinct study.

Q. Well, now it is a fact that you have not changed your unit prices; that is, you have used the same unit prices in this study that you did in your original appraisal, isn't it?

A. Yes, sir, that is right.

Q. Now how did you arrive at those unit prices?

A. Those unit prices were obtained from the records of the city engineers in most cases in the different cities in the State.

Q. And what were they based on?

A. They were based on the costs of the city of putting in the paving of the different kinds.

Q. That is, the cost determined by contracts with contractors who put in the paving for them?

A. That is right; the costs that the city paid.

[fol. 3096] Q. Did you apply those costs,—or did you find that the costs varied in different cities?

A. Yes.

Q. Did you apply the costs that you found in any particular city to the paving that you were considering in that city?

A. No, sir; we averaged those costs, weighting them to a certain extent so that they would reflect a weighted average for the State as a whole.

Q. And did you learn the distribution of that cost as between material and labor?

A. Yes, sir.

Q. Have you your study on that?

A. Not here.

Q. Can you tell us what cities you got prices from on the different classes of paving?

A. I cannot tell you definitely, but I know that we went to several cities. My recollection is that there were included in that list Columbus, Toledo, Cleveland and several others but I do not recollect precisely what they were.

Q. Well, can you give us the amount that is included in your unit cost on any of these items for material and the amount for labor?

A. I cannot give that to you from information that I have here, no, sir.

Q. Will you get that for us?

A. Yes.

Q. When can you do that?

A. I do not know.

Q. Where is it; over at your office?

A. It is over there but I don't know whether we can get it out of the files and have it available here this afternoon or not. I will try to do it.

Q. Has your company any experience of its own in the [fol. 3097] replacing of paving over conduit which you have studied for the purpose of developing unit costs?

A. We studied whatever information we had available on that, but it is my recollection that in most cases that work was done by the city and billed against us. Now in some cases where we have conduit installed by contractors, the contractor's bill will show that there was so much paving put in and the cost of it.

Q. Your understanding is that the practice in general is that the city does the paving in those cases?

A. That is my recollection.

Q. And bills your company for it?

A. Yes.

Q. In cases where the paving is cut through and replaced do you know whether the company does that by contract or by its own labor, supervised by its officials?

A. Well, in a good many cases, especially at the present time we are contracting for our conduit work as a whole, and the contractor does the cutting through. Of course, we have some supervision on the job; the city also has some supervision on the job.

Q. You have a total here of 355,703 square yards of paving which has been done over main conduit as you say, at a total cost of $1,238,280.00 for which your company or its predecessors have paid; that is correct, isn't it?

A. No, that is not correct.

Q. What is the fact?

A. Why, the fact is that that $1,238,280.00 is the cost to reproduce on costs as of June 30th, 1925, of original pav- [fol. 3098] ing, but not what our company or its predecessors pay.

Q. But your company has paid the cost of replacing that paving at whatever price it was at the time?

A. Yes; either company or its predecessors.

Q. Either your company or its predecessors, and as you understand that, that has usually been done not by the company but by somebody else who billed the company for it, either the city or a contractor for the city, or in some cases a contractor for the company?

A. I think that statement is correct, although I would like to say this, that the tendency at the present time is more to have the city do the replacing, or a contractor probably, than it was at the time the original paving was put in. At the time the original paving was put in back over a period of years it may have been the custom more for the company to do its own replacing than it is at the present time.

Q. Well, you are not in a position to give us any information about the unit costs at the present time?

A. I am not; I have none of that information with me.

Q. Do you intend, by putting in this exhibit, to revise or make any changes in the company inventory and appraisal?

A. No, sir; this information is simply supplementary to what is already in the appraisal of the company, and I feel certain that there was a request made for this particular kind of information, and I think that the record shows that request. Now whether you made it personally, Mr. [fol. 3099] McConnaughey, or Mr. Hagelbarger or somebody else made it, I do not know, but as far as I am personally concerned I think that the appraisal as it stands, reproduction cost new in present condition, containing the paving cut through or what would have been cut through as of June 30th, 1925, is the proper basis.

Q. Your position then is that notwithstanding the fact that some of this paving was not cut through by your company or not placed there by your company and represents no expense incurred by your company, still it should be a part of the rate base and you should have a return upon that, as well as all the other property?

A. Well now, in answer to that question I would like to say this, that first, my theory is that an appraisal on a reproduction basis would necessarily include all of the paving over all of the conduit, as of that date certain, for the reason that it would not be possible to reproduce the conduit without cutting through the paving; second, as to the rate base, contained in your question, I feel that the cost to reproduce new in present condition is the strongest factor to be considered in arriving at your rate base.

Q. And that would include, according to your theory, all of this paving whether cut through or not?

A. That is right.

Q. Well, now, assuming that that theory is not correct and that only the amount of paving that has been actually cut through should be allowed, what adjustment should be made in your appraisal on the basis of your exhibit 16? I [fol. 3100] have before me page 43 upon which—of volume two I believe it is of Williams' exhibit 7b, upon which is listed the paving in three groups; paving over main line trench, which I understand to correspond to what you call in Williams' exhibit number 16 main conduit, and you show a total opposite that of $1,480,844,00 as the first group. Now should that be changed under the conditions that I have assumed, to $1,238,280.00? I mean should that total of $1,480,844.00 be changed to a total of $1,238,280.00?

Mr. Burr: Wait a moment; it seems to me that is a question for the Commission.

Mr. McConnaughey: What I am asking the question for is to have him show on his own appraisal what adjustment should be made in this paper.

The Witness: That is on your assumption?

Mr. McConnaughey: Yes.

Mr. Burr: But he claims, of course, there should be no adjustment.

Mr. McConnaughey: Well, I am asking him to assume there should be. I think it is a perfectly proper question.

It gets this information into the record by the person who made the original document.

Chairman Marshall: I think it is competent.

Mr. Burr: If it can be understood that the question and the answer are based entirely on your assumption, that is all right.

Mr. McConnaughey: Well, that is the question, of course.

[fol. 3101] Chairman Marshall: He asks him in case his theory was not correct; go ahead.

The Witness: On the basis of your assumption, in order to exclude from the appraisal the present paving over the main conduit as set up in Williams' exhibit 16 as $1,480,844.00 and include in lieu thereof the original paving for main conduit as set up in Williams' exhibit number 16 amounting to $1,238,280.00, it would also be necessary to take into consideration the proper amount of undistributed construction expenditures at the percentages at which they appear on Williams' exhibit number 20; that is, it would be necessary to take out not only the main conduit on the basis of present paving, but also to take out the proper proportion of undistributed construction expenditures applicable thereto, and in substitution of the original paving, substitute also the proper amount of undistributed construction expenditures applicable thereto.

Q. Yes, but the first step would be to reduce this item of $1,480,844.00 which is the amount of the paving over main line trench, to $1,238,280.00.

Mr. Burr: I object.

Chairman Marshall: What is that question again?

Mr. McConnaughey: If the Commission please, Mr. Williams did not answer the question that the Commission ruled he should answer, but proceeded to tell us about the over-heads that should be deducted. I am simply getting back to the question which you ruled was proper for him to answer.

[fol. 3102] Mr. Burr: Mr. Williams has already stated that the amount for present paving should not be reduced.

Mr. McConnaughey: Oh, well, we are going back to the original assumption as to what changes should be made in the possible event that Mr. Williams and you are wrong about that.

Chairman Marshall: I think the question is competent. The Commission is to decide what theory is to be applied in allowing for paving.

Mr. Burr: But the exhibit speaks for itself and why counsel should try to ask Mr. Williams to say that some other theory is proper on counsel's assumption, I do not quite understand.

Chairman Marshall: He did not ask him to say that. He said in case his theory was not correct, if they should not go back to certian figures. I think it is perfectly proper. Go ahead.

Mr. Burr: What theory is correct if the reproduction cost in your theory is not correct?

Chairman Marshall: That is for us to decide.

Mr. Burr: Well, that is exactly the point, Your Honor.

Chairman Marshall: And he asked him——

Mr. McConnaughey: There is no question of law involved in this matter at all; it is just a question of a little clerical work which we are asking the man who prepared the exhibit to do so it can be done according to his ideas. [fol. 3103] We did not ask for this, and I will swear to that in this record, and if this is not their testimony it is not in this case.

Chairman Marshall: I have ruled on it. I think it is competent.

Mr. Burr: Note an exception.

Chairman Marshall: As I understand it, it is on the ground, or Mr. McConnaughey's question is in case the theory were propounded in relation to the figures set forth in this exhibit, and another theory should be applied, then if they should not go back to certain figures.

Mr. McConnaughey: That is all there is to it. It is just a clerical matter and no law involved.

The Witness: The statement is in the record that my answer is not in answer to the question asked, and I would like to have the original question read.

Chairman Marshall: Read him the question.

(And thereupon the original question was read as follows: "Q. Well, now, assuming that that theory is not correct and that only the amount of paving that has been actually cut through should be allowed, what adjustment should be made in your appraisal on the basis of your ex-

hibit 16? I have before me page 43 upon which—of volume two I believe it is of Williams' exhibit 7b, upon which is listed the paving in three groups; paving over main line [fol. 3104] trench, which I understand to correspond to what you call in Williams' exhibit number 16 main conduit, and you show a total opposite that of $1,480,844.00 as the first group. Now should that be changed under the conditions that I have assumed, to $1,238,280.00? I mean should that total of $1,480,844.00 be changed to a total of $1,238,280.00?")

The Witness: My answer I think told what should be done to that particular page and it also answered the first part of the question asking what changes should be made in the appraisal. That is the reason I put in the undistributed construction expenditure item.

Mr. McConnaughey: Let the answer be read and see if you did answer with reference to what should be done with that particular page. I did not catch it if you did.

(And thereupon the former answer was read as follows: "Ans. On the basis of your assumption, in order to exclude from the appraisal the present paving over the main conduit as set up in Williams' exhibit 16 as $1,480,844.00 and include in lieu thereof the original paving for main conduit as set up in Williams' exhibit number 16 amounting to $1,238,280.00, it would also be necessary to take into consideration the proper amount of undistributed construction expenditures at the percentages at which they appear on Williams' exhibit number 20, that is, it would be necessary to take out not only the main conduit on the basis of present [fol. 3105] paving, but also to take out the proper proportion of undistributed construction expenditures applicable thereto, and in substitution of the original paving, substitute also the proper amount of undistributed construction expenditures applicable thereto.")

Chairman Marshall: Doesn't that fully answer you?

Mr. McConnaughey: I do not think so. He has not told in that answer what to do with page 43. He answered it in principle and indicated what should be done, but I should like to have him to state specifically what we should do with that page 43.

Mr. Burr: If I understand him he says that nothing should be done to that page.

Commissioner Mauller: That is on the reproduction theory?

Mr. Burr: Yes; if anything else is to be done, let the other side show it, what they think should be done. But why ask his witness what he thinks should be done on counsel's assumption, when the witness has already said that the matter should stand in his judgment.

Mr. McConnaughey: Why, I have not asked him to do that.

Chairman Marshall: I have been trying to listen to the questions and the testimony, and as I undertsand it, Mr. Williams apparently understood what his theory is and he answered very completely and concisely, and then the ques-
[fol. 3106] tion was propounded to him in case his theory was not correct, what change ought to be made according to the assumption that Mr. McConnaughey set forth as to certain figures in the exhibit referred to. I think that is perfectly competent cross-examination. He has not said his theory was not right.

Mr. Burr: No; but have counsel the right to propound this kind of a question; "If your theory is not right and my theory is correct, then what should be done?" Why that is for counsel to show. It is not the subject of a question to be propounded to a witness. The witness says that the figure should stand. "All right," say counsel, "but suppose you are wrong, and on my assumption then what change should be made, if any?" That is a matter for the Commission or for counsel to show by their own witnesses. You are asking this witness to state something which he does not believe is true. That is the long and short of it.

Commissioner Maullar: He is just stating what would be true based upon the assumption given him by counsel.

Mr. McConnaughey: Let me just state what we are trying to do here in just a little different way. On page 43 there is a group of paving under the heading "Paving over main line trench," which is not totaled. Mr. Williams in his exhibit number 16 has indicated "Main conduit" under the heading "Present paving 6/30/25," a figure of $1,[illegible]80,-844.00. Now I assume that that is the total of what he has listed here under the heading of "Paving over main
[fol. 3107] line trench" and the purpose of my question is to find out whether or not the total of those items should

be changed from $1,480,844.00 to this new figure of $1,238,280.00 if the theory that he does not think is right, is adopted with reference to this paving.

Now it is a matter of identifying the items simply as a clerical proposition. There is not a bit of law involved in it. It is just a matter of convenience for all of us and we are asking the man who prepared the exhibit to show how the exhibit should be changed upon this assumption.

Mr. Burr: I do not want to be captious, but I still insist that you are propounding a question to this witness which is one for the Commission's decision.

Mr. McConnaughey: Oh, no, I am not asking him to decide anything that the Commission should decide; I am simply asking him to do some figuring that he should have done in the first place by indicating what these totals should be.

Chairman Marshall: I do not think there is any question but what it is competent. He can be asked if a certain theory is correct if his figures should not be changed to conform to that theory. The ruling may stand and you may note an exception.

Mr. Burr: Note my exception.

By Mr. McConnaughey:

Q. Now what is your answer?

Chairman Marshall: That does not in any way weaken his theory or his idea of the theory that it is correct. He [fol. 3108] is just asking if there should not be certain changes in his figures.

Mr. Burr: Under that kind of a ruling it would be just as competent to ask this witness this kind of a question; "If the reproduction cost new theory is not correct, then what ought your appraisal be on an historical cost theory"?

Mr. McConnaughey: Oh, no, no.

Mr. Burr: Just exactly.

Mr. McConnaughey: What do you want to be so nasty about this for?

Mr. Burr: I am not nasty.

Mr. McConnaughey: You are smearing us all over with indirect charges of incompetency and foolishness and everything else.

Mr. Burr: I am not nasty at all and I insist that the objection is well taken and I note my exception.

Mr. McConnaughey: Well, that's fine; that's the way to do it.

Chairman Marshall: Now answer the question.

The Witness: On your assumption, and applying the answers specifically and entirely to page 43, there should be substituted for the total of present paving amounting to $1,480,844.00, the original paving item of $1,238,280.00.

Mr. Burr: I move to strike out the answer.

Chairman Marshall: Motion overruled.

Mr. Burr: Note an exception.

Q. Now the next item "Paving over manholes," in your [fol. 3109] column headed "Present paving 6/30/25," I have the figure $62,935.00; is that the total of the items under the heading "Paving over manholes" on page 43?

A. It is.

Q. And upon the same assumptions as were involved in the previous question, that should be changed to $94,620.00; is that correct?

Mr. Burr: Let the record show my objection to the previous question and all similar questions; that the objection is overruled and my exceptions noted.

Chairman Marshall: Objection overruled.

Mr. Burr: Note an exception.

The Witness: That is correct.

Q. And also on page 43 there is a section headed "Paving over subsidiary conduit," and your exhibit 16 shows the item "Subsidiary conduit $366,056.00;" that is the total of the group of items headed "Paving over subsidiary conduit," on page 43 of Williams' exhibit 7b, is it? My attention is called to the fact that the items under the subhead "Paving over subsidiary conduit" extend over on page 44; and it is the total of all of those items on both pages that I am asking you to direct your answer to.

A. For the subsidiary conduit, that is right.

Q. And upon the assumptions of the previous question that should be changed to $255,583.00?

A. That is right.

Q. Is that correct?

A. Yes.

Q. All these changes to which I have called your attention as proper upon the assumption stated in the question [fol. 3110] together with the changes in the application of

percentages on the overhead charges, would be the total effect of a change in theory applied to this exhibit of reproduction cost new; is that correct?

A. On that assumption, yes.

Q. Now, Mr. Williams your exhibit number 16, under the second item "Manholes" shows $94,620.00 worth of original paving. The present paving is only $62,935.00. Now what is the reason of that?

A. That is why there happens to be a larger amount in the original paving than there is in the present paving?

Q. Yes.

A. That is due to two reasons; one of them is that in the present paving you will recollect my testimony was to the effect that we had assumed an average area of paving to be cut through in order to place an average size manhole. In the information collected relative to the original paving actually cut through, we found that there was more paving actually cut through than appeared in the present-day paving as of June 30th, 1925 for the same manholes. Also there was a different type of paving cut through originally than that which existed as of June 30th, 1925, and in many instances that original paving was of a more expensive type; for instance, in the original pavement in a good many cases we had heavy stone block paving that was cut through. In the present paving, that might have been a cheaper type of paving, brick or asphalt or something of that kind.

Q. Well, you undertook to find out what had been there [fol. 3111] originally when your company or its predecessors cut it through?

A. Right.

Q. And appraise the value of that paving, although it had later been replaced by some cheaper form of paving?

A. Yes; I was endeavoring to obtain the reproduction cost new as of June 30th, 1925 of the paving both as to quantity and type that was originally cut through.

Q. And you were not paying any attention to the paving that is in place in these various places at this date?

A. Not in arriving at my original paving figures.

Q. Then your original paving figures in that respect at least, are not included in your present paving figures?

A. No, sir; that is precisely the distinction I made in answer to one of your previous questions.

Q. Then your paving costs would be on a different basis

in the two columns wouldn't they; that is the original paving would be at a different cost than the present paving, that is in this second class—this second reason for that difference that you have given?

A. Please repeat that question again.

(Question read.)

A. It would be at a different cost provided it was a different type of paving. If it were the same type of paving it would be at the same cost.

Q. Now I wish you would state how much of your paving over manholes, as you have given it in exhibit 16, under the heading of "Original paving" was for paving different from what is now in place?

A. That would be impossible to answer without an inves- [fol. 3112] tigation and analysis of both the present paving and the original paving over every manhole in the State.

Q. Well, you have done that, haven't you?

A. Not in a comparative manner, no, sir.

Q. How did you make up your list of original paving; what was your method of going about that?

A. The method was to take the records of the company today indicating the location of all of the conduit in the State of Ohio; then to go back through the records and find the date of installation of that conduit and the type of paving that was over the conduit and cut through at the date it was installed. Now that has no reference to a comparison or in the way of a comparison to the pavement that existed there as of June 30th. It was not worked up on that basis at all.

Q. When you found from your records what had been cut through—what kind of paving had been cut through in a given instance, you set that down as the amount of paving that should be set forth in this column, did you?

A. For that particular conduit run, yes, that is right.

Q. And you went all over the State and did that in every instance where there is any conduit under paving; is that right?

A. Yes.

Q. And you found company records covering all that?

A. No, sir.

Q. What did you do when you did not find company records?

A. As I said in some cases we had the dates of installation of the conduit system and it was necessary to go to [fol. 3113] the city engineers' offices in the different cities to find out what the type of paving was that was cut through, or whether in fact there was any paving cut through; and in other cases it was necessary to refer to records such as memoranda in the records themselves or in the possession of employees or in a few cases, to refer to the personal information of older employees.

Q. Now what was the size of the manhole that you figured originally in your original testimony, without going back into the record to dig it up; I should say what was the amount of paving that you figured on with reference to each manhole?

A. 2.45 square yards per manhole.

Q. And did I understand you to say you found only in some instances that that was not large enough, or was that found to be too small in all instances?

A. Well, no; in some instances it was too large; in other instances it might have been too small; but the aggregate would be that it was not large enough.

Q. And the figure that you have put in here represents the exact figure as you found it from your investigation made in the manner you have indicated of the amount of paving that was laid over the manholes?

A. The original paving cut through, yes, sir.

Q. Now was all that you found from the records of the company charged to construction?

A. I did not raise any question along that line, partly for the reason that I was not pursuing the investigation from the standpoint of the money values involved at all, and [fol. 3114] partly because I was not concerned as to what it was originally charged to. I was attempting to set up the costs to reproduce new the original paving as of June 30th, 1925.

Q. Were you able to distinguish in your investigation between work that was done in the way of paving over manholes at the time of the construction of the manhole and work that was done as maintenance work repairing damage to paving that was put in after the manhole had been installed?

A. Please read that question again.

(Question read.)

A. I did not attempt anything in the way of a distinction between construction and maintenance because I was simply attempting to find out what pavement had been cut through at a given date; that is the date of the installation of the conduit.

Q. Well, if you did that, your investigation would be confined to construction, would it not?

A. Why, yes, I should think it would.

Q. How did you make your investigation; from records or from actual inspection of the property?

A. It was made from records; we could not tell by inspecting the property when the paving had been cut through or what type of paving was originally there.

Q. How much of this difference in the paving of manholes was due to the difference in the size or the amount of paving with reference to each manhole?

A. Please read the question.

(Question read.)

[fol. 3115] A. Do you mean each specific manhole or the average manhole?

Q. No; the total to start with?

A. That would be impossible to tell, Mr. McConnaughey, because I did not attempt to keep any such records in the investigation.

Q. Well now, as a matter of fact, you have given two reasons why those amounts differ?

A. Yes.

Q. One of the reasons is that the amount that you paved around each manhole, in some instances at least, was larger, and in some instances smaller, and that the net effect was to increase the number of square yards?

A. Yes.

Q. Now what is the difference between the yardage on the present paving and the paving originally cut through?

Mr. Burr: Are you now referring to paving over manholes?

Mr. McConnaughey: Over manholes only, yes, sir.

The Witness: The difference as shown by my exhibit is 17,203 square yards more in the original paving than in the present paving over manholes.

Q. Now the other reason that you have given was that the paving that was cut through was of a more expensive

type than what is now in place, and that would affect only the dollars, wouldn't it?

A. Yes, and that, of course, was not only in one instance but in several instances.

Q. And that difference would be reflected not in feet but in dollars?

A. Yes.

Q. And those are the only two things that caused any difference in these two columns, aren't they?

[fol. 3116] A. Those are the only two things that I can think of at the present time.

Q. Then the total amount of the difference in the amount of paving over manholes would be this figure of 8,000 square yards that you have just given us, wouldn't it?

A. I didn't know that I gave you 8,000 square yards.

Q. Well, you said the difference between 18,522 and 26,380 would be almost 8,000 square yards, wouldn't it?

Mr. Postle: I thought he said 17,000.

Q. Well, in your exhibit 16 the sheet headed "Paving over manholes," you show the original paving, the total square yards as 26,380.64 and the present paving as 18,522.38 square yards, and the difference indicates that the original paving cut through was 7,800 plus of square yards; isn't that correct?

A. The difference in the two sheets in regard to square yards of paving over manholes is due to the fact that in the sheet which contains only square yards of paving, there is included both for the original paving and the present paving certain items such as earth which was not priced out in the appraisal, Williams' exhibit number 7b, and neither the original paving nor the present paving is carried forward to the previous sheet in Williams' exhibit number 16 in obtaining the comparison in dollars.

Q. And, of course, you have also left out, those items in the comparison in the amount in square yards in the exhibit that shows both the square yards and the dollars?

A. Yes; that is the one I refer to.

[fol. 3117] Q. Well, that sheet shows the only items that you have taken into consideration in the change that you have indicated should be made upon our assumptions in the amount; that is, you have not taken into consideration the earth or this bridge item or the brick on slag item in

indicating the difference between the present paving and the original paving when you come to make your totals in the summary on the first page of your exhibit number 16?

A. That is right.

Q. Now the fact is then that you show in this exhibit, on the sheet exhibit 16 headed "Paving over manholes," the original paving amounts to 26,380 square yards and the present paving 18,522.38 square yards, which shows that there was cut through 7,858.26 square yards more over manholes—cut through and replaced—than there is now paved over manholes in your state-wide inventory?

A. Not exactly.

Q. Well, what is the exact fact?

A. The statement shows that there was cut through originally that much more, the figure you have named, than the figure that I set up in my inventory and appraisal as existing June 30th, 1925. But, as a matter of fact, as I testified in my original testimony, I thought that the figure set up in my June 30th 1925 inventory was conservative, there not being a sufficient amount allowed per manhole.

Q. Is that the only difference there is between those two figures; that is the difference that arises in the difference in the size of the paving over manholes?

A. Are you talking about yardage now?

[fol. 3118] Q. Yes; did you find any instances where paving was cut over manholes and replaced and that paving is not now in your inventory for any reason?

A. That is the original paving is not now in the inventory?

Q. Yes?

A. Oh, yes.

Q. I mean in the paving over manholes; where there is not now any paving?

A. That condition might possibly exist but I don't remember any such condition.

Q. You did not find any cases of that kind?

A. Not that I recollect of, no, sir.

Q. And you don't know of any other reason for any difference excepting in the size of the opening over the manhole that had to be paved?

A. No; but inasmuch as the allowance in my June 30th, 1925 inventory was only at the rate of 2.45 square yards per manhole, or in other words, an average manhole dimen-

sion—or rather an average dimension of paving cut through which, of course, had to be as large or larger than the dimensions of the manhole of about five foot by 4½ feet surface measurement, I think that that, as one reason of an insufficient allowance for yardage for the average manhole in the June 30th, 1925 inventory is sufficient.

Q. You found instances, however, where you had allowed too much, didn't you?

A. I don't recollect any.

Q. You said so a while ago.

A. I said there might have been, and if I did that is probably right. I do not recollect them at the present time.

Q. But you did recollect them a while ago when you said that.

[fol. 3119] A. I don't remember. If I did, that is what I am still saying.

Q. Well, now you have the result of your check of this paving situation in your working papers; that is the details as to the places where you found the paving cut through and where it was cut and all that, have you?

A. They are in the working papers but I do not think they are all in Columbus. I think part of them are in Cleveland.

Q. Well, the same information that you had for the purpose of compiling these exhibits is available to us for checking if we desire to look over it in detail?

A. Yes, sir.

Q. Now you were asked yesterday to produce some information in the form of an exhibit with reference to prices on central office equipment, were you not?

A. Central office equipment costs, yes.

Q. Have you that exhibit prepared?

A. Yes, sir. (Producing same.)

Q. Let me have it, please. Mr. Williams, will you state for the record what the paper is that I call your attention to?

A. This is a statement of the original costs to the Ohio Bell Telephone Company of certain central office installations made from 1920 to 1924 inclusive; the statement showing in detail the various divisions of costs as between labor, material, installing material, manufacturer's detailed costs identified as Western Electric engineering, freight and cartage, contingencies and total.

Q. And by whom was this made up?

A. That was made up by me and under my direction and supervision.

[fol. 3120] Q. And for what purpose?

A. To be used in arriving at proper loading costs for central office telephone equipment in the company-wide case.

Q. And in the two lines at the bottom which are called "Percentage to material" and "Used" respectively, will you state what the items opposite those designations are?

A. The "Percent to material" line indicates the percentage that the total for each of the items just named represents in comparison with the total for material. The line indicated as "Used" indicates the percentages actually used in compiling the costs for this type of equipment in the company-wide appraisal.

Mr. McConnaughey: This may be marked for purposes of identification as State exhibit number 1, and let it be understood that it is not offered in evidence but is marked for identification.

And thereupon the document last above referred to is marked for purposes of identification herein as State exhibit number 1.

Q. Now did you find whether the total amount of central office equipment that you checked up was $1,750,000.00 or $1,250,000.00?

A. I have had no opportunity to go into that question as yet.

Q. That is all that we asked you to bring that you are ready to produce?

A. Yes, sir.

[fol. 3121] And thereupon a recess was taken until 1:30 o'clock P. M. of same day.

[fol. 3122] Afternoon Session

Wednesday, November 10, 1926.

And also GEORGE B. WILLIAMS, resuming the stand for further cross-examination, having been duly sworn, continued his testimony as follows:

Cross-examined.

By Mr. McConnaughey:

Q. Mr. Williams, referring to your exhibit 7b, page 45, the item or the account "Exchange underground cable," you have testified that in developing your labor costs for that item you analyzed construction costs for this purpose to the extent of $1,172,072.00; will you tell us what jobs you included in that study?

A. That account is similar to some others that we have just discussed in that there was about half of that total of one million and something that was subsequent to the actual date of making up the unit costs, and which subsequent-half was considered in substantiation of the units already made up. For the purpose of making up the unit costs themselves, there were considered estimates to the extent of about $560,000.00. Now those were made up of a considerable number of estimates.

Q. Well, were they routine or specific items?

A. To the extent of over $400,000.00, they were specific estimates and routine for a total of about $140,000.00.

Q. And of the specific estimates what was the largest? [fol. 3123] A. Well, that is almost impossible to tell, Mr. McConnaughey. I gave you an answer on a similar question in regard to underground conduit that was not strictly correct for the reason that on both underground conduit and this account that we are now discussing of underground cable, we have the account divided into codes or subdivisions; that is the underground conduit is divided into main and subsidiary and the underground cable is divided into main, subsidiary and house cables. Now the same estimate may have one or more of those subdivisions included, so that from the figures I have here it would be almost impossible to tell what the largest one was. But I can say this, that the largest one ran over $40,000.00.

Q. How many of these specific estimates were there in this total?

A. Well, that would be pretty hard to tell also for the reason that there is a duplication between the main underground conduit amounts that I have set up here and the subsidiary, and in some cases probably on the house. I would say that there were two or three dozen of them probably.

Q. Well, they ranged from $48,000.00 down to how much—or upwards of $40,000.00?

A. A little over $40,000.00 probably down to possibly $1,000.00 or maybe a little less than that.

Q. How many of those jobs were over $30,000.00?

A. That would be pretty hard to tell without adding in and identifying each estimate on the main and on the sub-
[fol. 3124] sidiary and on the house and adding them in on each one.

Q. Well now, in this study what did you determine to be the labor cost on the item of exchange underground cable?

A. Do you mean the factor?

Q. Yes?

A. There were two factors developed, one for the main and subsidiary cable and one for the house cable. The main and subsidiary cable factor was .496. The factor for house cable was 1.2056.

Q. That is, you got that percentage of the material cost for your labor cost?

A. Oh, no; I got that increase in factor over the tentative —or decrease, whichever it may be—over or under the tentative unit cost.

Q. I will come to that later. What was your percentage or what percentage of your material cost did you use as your labor cost on that item?

A. Well, we did not follow that sort of procedure except in the central office equipment.

Q. All right; how did you develop your labor cost there?

A. We developed our labor cost for the underground cable by pricing out the items of property included in the estimate completion reports on the basis of the tentative unit costs, comparing the total so obtained with the total actual cost as shown in the estimate completion reports for the same items, and developing a relation factor between those two totals. This relation factor was then applied to each of the tentative unit costs so that when the items in the estimate completion reports were priced out with the modified tentative unit costs, we would get the same total as was contained in the estimate completion reports.

[fol. 3125] Q. What were the numbers of the specific estimates that you used in making this study?

A. That is quite a job, to pick those out, Mr. McCon-

naughey, on account of the duplication between the 25 and the 15 and the 35 codes, and also a considerable number of them.

Q. You can give us the number of those that you used, can't you?

A. Yes, I can give them to you. It will take quite a while to give them to you on the witness stand. I can do it if you want it done.

Q. Now, you have said that there were some two or three dozen of estimates which you used in making up your unit costs on this item. Will you give us the numbers of those estimates?

A. The number?

Q. Yes, the specific numbers.

A. Have you any objection if I have any help in this?

Q. No, certainly not.

A. You see I have to check the one against the other. Those specific estimate numbers are 388, 422, 415, 413, 408, 385, 381, 378, 374, 361, 360, 357, 350, 347, 341, 324, 506, 621, 622, 651, 816, 674, 434, 507, 444, 834, 690, 628, 624, 618, 570, 564, 547, 542, 534, 528, 515, 508, 483, 474, 471, 423, 405, 380, 370, 606, 463, 446, 445, 441, 440, 365, 352, 462, 362, 351, 342, 611, 409, 376, 397, 382, 363, 670, 348, 481.

Q. Now, from these estimates, from the study of these estimate completion reports, you developed your factor for comparison with the Youngstown units of 496?

A. .496.

Q. .496 on the main cable?

A. Main and subsidiary.

Q. It was the same on main and subsidiary?

A. That is right.

[fol. 3126] Q. What was the factor of the house cable?

A. 1.2056.

Q. That is, you found that the estimate completion reports showed 49.6 per cent. of the result arrived at by applying your Youngstown unit on the main and subsidiary; is that correct?

A. That is right.

Q. That was a decreasing factor then?

A. No, this factor would have to be applied to the Youngstown units in order to bring them down to the level of the actual costs, but this .496 in itself was not a decreasing factor, but the effect of applying that to the Youngstown units would give a decrease.

Q. What is your decreasing factor that you used in this instance?

A. I don't know what it would be. I have not used a decreasing factor. I have applied this percentage and the effect is a decrease.

Q. But the practice in this instance was a little different than what it has been in some others, wasn't it?

A. No, I applied a factor just the same. The result was a little different in that it lowered the tentative unit cost instead of raising it. In every case I got a factor to apply, a percentage to apply. Now, the effect of this was a decrease in the main and subsidiary, and in the house and some other accounts it was an increase.

Q. I am trying to understand here why you distinguish your terms. You have used the terms increasing and decreasing factor here before, and you seem to be differentiating between them. What is the difference in practice?

A. I don't know that there is a difference in practice. I do not know that I have used the term decreasing factor. [fol. 3127] It is a factor which results in a decrease, but that is a little different thing from saying a decreasing factor.

Q. What is the difference?

A. The difference is this, that I applied this factor of .496. Now, that results in a decrease, but it is not the same decrease as if I would apply the decreasing factor of .496.

Q. What you got is .496—49.6 per cent. of what you got by your units?

A. Yes, sir.

Q. On the house cable you made an increase, and 1.2056 was your factor there?

A. That is the factor, that is right.

Q. I understand you are not able to say how much there was of labor and material in the total of these estimates that you studied?

A. As applied to each account?

Q. Yes.

A. I can give you the labor I used in the different accounts. For instance, in the main and subsidiary, the total labor that I took from the estimates for this purpose was $85,943. Now, I split that labor as between placing and splicing. I used 35 per cent. of the total for placing. Now, that 35 per cent. is based upon information received from the plant engineering people. It is an estimate on my part, but it is based on an estimate made by these different peo-

ple as to the percentage that is proper in this case. Instead of using the total of $85,943 for the placing part of this labor, I used only 35 per cent., which gives me $28,114 for direct labor for placing, taken from the estimate completion reports. Now, as comparable with that, on the basis of the tentative cost with the same items of plant, I get $54,634. [fol. 3128] I added to that last figure on the tentative basis for incidentals, $8,195, and for plant supervision and tools $13,658, or a total of $76,487. To the $28,114, as taken from the estimates for placing, I added $3,514 for incidentals and $6,326 for plant supervision and tool expense, giving $37,954. This, compared with $76,487, gives me my factor of .496. Now, the reason that that factor is small as compared with the other accounts, is on account of this division that I have made between placing and splicing. In the tentative unit costs I had what I considered to be too much for placing as compared with splicing. Now, I adjusted that in these units here by only allowing 35 per cent. of the total. Now, that brings my factor down to .496. Of course, I loaded in the balance of the actual labor as a percentage for splicing later, so that I have used precisely the same labor in total as I took from the estimate completion blanks.

Q. You made that adjustment because you considered your Youngstown units were too high?

A. They were too high for the placing part of the labor and too low for the splicing part.

Q. Why do you distinguish between the placing part of the labor and the splicing part? Isn't it all a part of the job of placing the cable?

A. It is, but it has been my practice in the past to embody my splicing as a percentage and I simply followed the same procedure here.

Q. What percentage did you add finally for the splicing?

A. The relation of splicing to placing was 1.69. Now, that is the figure that I loaded in for my splicing later in my unit costs.

[fol. 3129] Q. What led you to believe that you had allowed too much for the splicing in your Youngstown figures?

A. The conversations that I had with various plant and construction people, with plant people and engineers.

Q. How did you happen to use those particular units in the Youngstown case for that account?

A. That was the best information I had available at that time.

Q. Which you got from the same source, I presume, that you got this information finally?

A. Some from the same source, but not as complete installation. I felt this was a larger and more important case and went out to get more information.

Q. Well now, on page 46, under the heading of No. 22 B. & S. gange cable, 101 pairs, will you analyze your unit cost in that instance and tell us how much is for material, how much for labor and how much for the other elements that enter into it?

A. The total unit there set up on page 46 is 62 cents per foot. The unit arrived at in the compilation arrived at here is 62.3 cents. We used 62. Out of that 62.3 there is 33.8 material and 28½ cents labor and incidentals. Now, do you want the analysis of that labor unit?

Q. Yes.

A. Of the 28½ cents for labor, there is 10.6 cents that is placing labor, and 17.9 that is splicing labor.

Q. How many splices have you allowed for per thousand feet of cable, or how have you worked that out?

A. That was not allowed on that basis. It was allowed on the basis of percentage of splicing labor to placing labor.

Q. Was that the percentage you worked out or told about a few minutes ago?

A. Yes, 1.69.

[fol. 3130] Q. Just how did you get that?

A. That is based on the split-up of the total labor as between placing and splicing. Allowing 35 per cent to placing and a small amount for placing in terminals and the balance to splicing.

Q. Will you give us in detail just how you work that out?

A. Yes. There is another step in that. In the first place I divided 35 per cent to placing and 65 per cent to splicing. Then I reduced by splicing 15 per cent for splicing in working cables. That 15 per cent is also an estimated figure, based on information received from the plant and engineering people.

Q. What do you mean by splicing working cable? That is cable in use?

A. Yes, that is splicing in cables into cables that were

working, making additions to working cables, and such as that. Taking that 65 per cent and reducing it by the 15 per cent, or taking out 85 per cent, gives me 55.25 per cent.

Q. Why do you take that out?

A. For splicing in the working cables.

Q. Why did you take it out because it was splicing?

A. Because this is a reproduction job; in reproducing the plant we would not be splicing in working cables.

Q. Is that more difficult or less difficult, or how does it affect the cost?

A. It is not a part of replacing at all. If you were reproducing the property, you would put it up straight through and you would not have to do it.

Q. Is it more or less difficult? What is the difference in the job?

A. It is more difficult than it would be if you were going [fol. 3131] ahead on a straight reproduction basis.

Q. These jobs were additions to working plant?

A. Yes, sir.

Q. Were there any instances where any of those specifications were entirely new construction that had no relation to working cables?

A. Oh, yes, the majority of them were. This 15 per cent is just an allowance for what I felt to be the amount of excess labor that was due to splicing in the working cables we did work into.

Q. And that proportion you relied upon from estimates you gave on the calculation?

A. Yes, sir. Now, 65 per cent of 85 per cent leaves 55.25 per cent allowed for placing. Now, that balance of 35 per cent I reduced by 2.3 for labor and placing terminals and equipment, that is, as against placing the equipment itself. Now, that 2.3 is arrived at from a study of the costs of placing underground and aerial terminals. Taking out this 2.3 per cent from the 35 per cent leaves me 32.7 per cent. Now, I have got my placing cost down to the bare cable placing cost, 32.7 per cent. I have got my splicing cost down to the splicing costs for straight cables, not working cables. The splicing costs I have reduced to 55.25 per cent, and, dividing that by the 32.7 per cent placing cost, gives me a relation of splicing to placing cost of 1.69, which is the factor I used.

Q. Now, you have your terminals included in this same sub-division, do you not?

A. Yes, sir.

Q. Have you a separate price for the terminals?

A. Yes, sir.

[fol. 3132] Q. How did you work that out? On page 55 under the head of "Subsidiary Cable" there is the second item, 16 pair—under the heading of "Subsidiary Cable Terminals" outside, unprotected, the second item is 16 pair, of which the unit cost is given as $8.44. Will you analyze that unit cost in the same way that you did the underground cable?

A. The labor, or, rather, the total unit cost, as arrived at, was $8.44½. We used $8.44 in the appraisal. Of that $8.44½, there is $7.364 for material and $1.081 for labor.

Q. And the labor is divided how, if at all?

A. The total is arrived at, $1.081, by applying to the tentative cost of $1.132 a factor of .955. This is a separate factor from the cable and is taken from the aerial cable, on the theory that the placing of terminals would take about the same labor cost. Terminals, of course, are not strictly underground, although they are part of the underground system.

Q. They are practically the same as overhead cable except that they are connected with the underground cable?

A. Yes, sir.

Q. Your figures there are practically the same as for overhead cable?

A. The total unit cost won't run quite the same, both on account of the little difference in the tentative labor cost and probably a little difference in the material cost, but as far as the labor costs are concerned, there will be but very little difference.

Q. Now, your submarine cable, I believe you stated, was not based upon any records of the company, but upon an estimate which you made. Is that correct?

A. Yes, sir, that is correct.

[fol. 3133] Q. And how did you divide your unit cost there between the labor and material?

A. I haven't any of that information with me, Mr. McConnaughey. I did not anticipate that you would want anything on submarine cable.

Q. Now, take the toll pole line account. You called attention to the fact that the total number of poles, that is toll poles, in the company-wide inventory, is 231,956, whereas you found in the detailed field inventories a total of 295,877. Now, these field inventories from which you get the figure of 295,877, did they cover the entire property which was inventoried in the company-wide inventory?

A. They covered more than that. They covered the property that was in existence at the time of those old inventories, which was two or three years prior to the company-wide inventory.

Q. And your explanation of the difference that there is in the small number of poles in the company-wide inventory, is that it was mainly the result of the unification, after the consolidation of the Ohio Bell Telephone Company, and the Ohio State Telephone Company properties?

A. That is right.

Q. Was there any other cause you know of contributing to that in any way?

A. I don't recollect any now.

Q. Now, in your unit costs on the toll pole lines, I assume that your material costs were the same as they were on the exchange pole lines; is that correct?

A. For corresponding kinds, yes, sir.

Q. For corresponding sizes and styles of poles?

A. That is correct.

[fol. 3134] Q. Is there any difference in your labor factor?

A. Yes, sir.

Q. Why would there be a difference between the setting of poles in toll lines and in exchange pole lines?

A. Because of the different conditions under which the poles are set. You have a different kind of gang for a toll pole line construction than you have for exchange. You have longer hauls for your toll poles, and you have the factor of board and lodging that enters, to a greater extent in toll pole line than exchange pole line construction; and also you have a different wage factor to take into consideration.

Q. What is the difference in the wage factor?

A. I couldn't tell you offhand.

Q. Do you mean to say there is a different scale of wages paid to men who are working in toll pole line work?

A. Yes, sir, and they get greater board and lodging expense.

Q. Which gets?

A. The toll line construction gets a slightly lower payment per man, but they get the board and lodging allowance, which makes it higher than the other gang.

Q. In the case of toll pole lines you say that you based your unit prices on an analysis of actual construction cost to the extent of $394,573. What jobs did you study to get at that result?

A. Of that $390,000, there was about $268,000 that was used in the original computation, in order to determine the relation factor for the unit costs, and there was about $125 that was used in a subsequent proof test in order to substantiate the first one. That is, after the units were derived, I took the results of the latter part of 1924 and [fol. 3135] 1925, just as I have testified that I have done in other items, in order to find out whether there had been any change to any material extent in labor costs. First computation involved a total of about $268,785. That is made up of some 30 or 40 estimates.

Q. Are they specific or routine or are they divided between the two?

A. It is my recollection that there are no routines used in the toll pole line account. They are all specific.

Q. Will you give us the numbers of the specific estimates which you used?

A. 718, 697, 665, 656, 645, 616, 615, 595, 591, 577, 544, 543, 539, 498, 493, 468, 417, 410, 376, 549, 548, 520, 491, 482, 473, 467, 451, 441, 440, 337, 472, 562, 523, 492, 460, 447, 442, 428, 426, 403, 368, 329, 338, 299, 133.

Q. And of this $268,000 of estimates, that figure included the total cost both of labor and material?

A. Yes, sir.

Q. How much was labor and how much material?

A. The total material was $107,329, and the total direct labor was $68,151.

Q. Now, you applied your Youngstown units to those items, did you, as you have previously testified in other accounts?

A. Yes, sir.

Q. But through your process with reference to that item, using your figures and stating your results?

A. The labor cost arrived at by applying the tentative unit cost to the items of material contained in the estimate completion reports gave me $72,625; for incidentals [fol. 3136] I had $10,168; and for plant supervision and tool expense, $18,156. That gave me a total of $100,949. I took this $68,151 direct labor from the estimate completion reports, and for incidentals I had $44,980; and for plant supervision and tool expense $15,364; giving me a total of $128,465, or a percentage relation of 1.2726. I used 1.27.

Q. How do you account for the difference between the incidentals in those two calculations?

A. Why, the incidentals used in the tentative units were the incidentals set up in the tentative unit costs. The incidentals in the figures applied to the estimate completion reports are applied as a percentage, derived by taking the actual incidentals from the estimate completion reports themselves.

Q. They are four times as much in one case as they are in the other. Do you know of any reason why there should be that disproportion?

A. The reason is that the tentative unit costs were mostly on an exchange basis as far as the incidentals were concerned. That is, they were for exchange construction and they had in them a great deal less of this hauling expense and sundry disbursements covering board and lodging. So it was natural that that would have to be much larger in toll construction.

Q. You haven't then any Youngstown units that were strictly comparable to what you were studying in this cost?

A. I used the nearest thing I had, which was the Youngstown cost for rural construction.

Q. Now, take the 30 foot class C pole on page 63, of [fol. 3137] which the unit cost is $27.16, and analyze that unit cost, giving the different items of material, labor, and so forth, that enter into it?

A. I would just like to say, in connection with this one thing before we finish, that the factor that I derived in the manner that I have just related was 1.2726, while the factor derived in that subsequent substantiating proof was 1.2695, showing that the results of the latter part of the 1924 and 1925 construction were substantially in accord with the costs I had developed.

Q. Give us the estimate numbers on that subsequent study.

A. 640, 654, 594, 689, 667, 705, 726, 739, 771, 738, 418. Those down to that point are 1924 estimates. Then in 1925, 1050, 1010, 915, 977, 848, 644, 759, 638.

Q. Now, go ahead with your analysis of the unit cost on your 30 foot class C pole.

A. That item is $27.16. It is made up of $10.057 for material and $17.10 for labor. The latter figure we got in our actual costs, $17.068, which was rounded out to the nearest dime, or $17.10. That $17.068 is made up of $13.702 for the major item, that is, the pole itself, $1.866 for the miscellaneous item of stepping and brackets, and so forth, giving a total of $15.568, to which was added $1.50 per pole for trimming and surveying costs.

Q. What was that?

A. Those are the trimming costs in connection with making the survey and the costs of the survey itself in the location of poles.

Q. Trimming?

A. Trimming brush and such stuff in the line of the surveyor. Now, that location of poles on toll lines is necessary, for the reason that it is necessary to know exactly where [fol. 3138] to locate loading pots and loading coils, and also necessary to know the length of line in connection with tests.

Q. How much of that $1.50 is surveying and how much is trimming?

A. I don't know. I can give you the make-up by which I derived that $1.50 if you want it.

Q. All right, go ahead.

A. That $1.50 per pole is an estimated figure, arrived at from conversations with plant and engineering people, and based on the following set-up. Four men per day at $5.00 per day salary is $20.00. Four men at $5.00 per day, board and lodging, makes a total of $20.00. Plant supervision, tool and supply expense, loaded at the rate of 25 per cent. of direct labor, or 25 per cent. of the $40.00, is $10.00. I have next made provision for machine to transport the men, stakes, instruments and tools, for which I have allowed a rental of $5.00 per day. I have also allowed $5.00 per day for the maintenance and operation of that machine, for the stakes and the stationery and incidentals. That gives me

$60.00 per day. I have now figured that this surveying gang could survey and stake out 40 poles per day, doing the trimming, doing the measuring, locating and driving the stakes, driving back and forth morning and evening. Dividing the $60.00 by the 40 poles gives me $1.50 per pole. Now, the make-up of these four men is one transitman to operate the transit, make the sights and record the data, one lineman to measure and hold the rod, one lineman to hold the other end of the tape and measure and drive stakes, and one driver to drive the machine, drop the stakes, [fol. 3139] clear brush and limbs.

Q. Is that item in your Youngstown units?

A. No, sir, there was no toll construction in the Youngstown community, but I felt it should be in the toll units.

Q. Of course, that was the occasion for this special study to develop that?

A. Yes, sir.

Q. You had no record up to that time that included such an item of cost?

A. No record that I could get that would set them out specifically. As I say, I had talked to plant and engineering men who have been doing that type of work.

Q. Haven't you duplicated somewhere there in your allowance for supervision and tool expense, $10.00, and subsequently allowing for tools in your $5.00 item for contingencies?

A. No, I cannot see that I have, Mr. McConnaughey. The 25 per cent. for tool expense——

Q. That is supervision and tool expense.

A. The supervision and tool expense is loaded on direct labor and board and lodging, and that is the way we derived our percentage from the actual expenses of the company. It is based in connection with direct labor, board and lodging. Now, the $5.00 per day is practically all for the maintenance and operation of a machine.

Q. That is the second item of $5.00?

A. Yes, that is the rental of the machine. I say the other $5.00 is practically all for the maintenance of the machine and for the stakes.

Mr. Postle: What was it in the first five dollar item which you gave which is part of the 60 which referred to the tools? You said something about rental of tools in addition to machine, stakes and instruments.

[fol. 3140] The Witness: In which item was that?

Mr. Postle: The first five dollar item. I think the record will show that is what you said.

The Witness: That first five dollar item is only for the rental of the machine. There was $20.00 for the salary of the men, four men at $5.00 a day, $20.00 for board and lodging of four men at $5.00 a day, making a total of $40.00. There was $10.00 for plant supervision, tool and supply expense, based on 25 per cent of the $40.00. There was $5.00 for the rental of the machine per day, which was for the transportation of the men and the tools and the instruments and there was $5.00 per day for maintenance and operation of the machine and for the purchase of stakes, stationery for reports, and such things as that.

Q. Now, you carry a 4 per cent item for supervision and tool supply throughout all of these costs, don't you?

A. No, I carry a certain percentage for supply expense and I carry another percentage for plant supervision and tool expense.

Q. I mean plant supervision and tool expense?

A. Yes, that is through, but——

Q. Why do you make a special allowance in this particular item for that?

A. For this reason, that the plant supervision and tool expense which I have loaded onto my direct labor, was loaded on in advance of this computation entirely. This labor is experienced on reproduction and is being experienced to a certain extent at this time, and if we would have this on reproduction, which I think there is no ques-[fol. 3141] tion but what we would, we would have this additional labor and the plant supervision and tool expense on it.

Mr. Burr: When you speak of this additional labor, do you mean——

The Witness: The $40.00.

Mr. Burr: The $40.00?

The Witness: Yes.

Q. Now, this trimming and surveying expense, is that necessary where a pole line runs along the road?

A. Yes, sir, you have trimming expense. You have brush along a great many roads and you have got frequently the pole line going through woods or other brush, and of

course when you run a line in a survey to make your sights, the man does not stand up as high as the telephone pole. He has got to trim through where he can see.

Q. You have applied this exact cost, as you have figured, of $1.50 to every toll pole in the system, haven't you?

A. Yes, sir.

Q. That is upon the assumption that that expense would be necessary wherever you run a toll pole line?

A. Yes. That does not mean we would have trimming for every pole, but it means there would be a certain amount of trimming, and we would have the measuring and the laying out and the location of the poles.

Q. What is the surveying that is necessary in connection with the pole line?

A. The survey is to get the direction of your line straight.

Q. It runs along the side of the road; that is already [fol. 3142] done for you, isn't it?

A. No, that would be a case that you would simply wabble it in and out to the line of the road. You have got to have a line. You have to sight your line through your transit or level in order to get your line straight. We place our pole lines, our toll pole lines, especially, in a straight line as far as we can.

Q. In laying out or constructing a toll pole line, this trimming and surveying is done, isn't it?

A. Yes, sir.

Q. Then you would not have it in your construction cost that you get from your records of the company?

A. No, sir, because there has been very little of that until very recently. I do not think there is a bit of it reflected in the estimate completion reports.

Q. It has not been the common practice of the company to make these surveys?

A. No, they have gradually straightened up the lines after they put them in, and experienced more maintenance by reason of that, and the reason is, if the line is not straight, you are going to have a pole this way on one and the other way on the other.

Q. This is an entirely new element that has not been figured then?

A. It has not been figured before, either in unit costs or by the company. But I think it is justified in the reproduction of the property.

Q. Can you tell us from your knowledge of the property what percentage of this toll pole line is on public highways and how much is on private right-of-way?

A. Didn't I give an estimate on that in my direct testimony?

Q. I rather think you did in reference to the right-of-way. [fol. 3143] A. I don't know that I put in anything for the state as a whole. I have some studies that I made some time ago that would indicate that that ran anywhere from 6 per cent to about 35 per cent in the different sections of the state. Six per cent is the western division and 30 per cent or better in the southern and eastern division.

Q. That is 30 per cent of the line was on public highways?

A. No, 30 per cent of the line was on private right-of-way. That is, 30 per cent of the poles in that part of the state.

Q. Well, do you divide the state between east and west in that way?

A. My studies were made on the basis of the different divisions, eastern, western, northern and southern.

Q. Now, you mean eastern division as provided by the Ohio Bell Telephone Company?

A. The eastern division of the Ohio Bell Telephone Company. The southern division of the Ohio Bell Telephone Company ran around 30 per cent on private right-of-way, whereas the western division and the northern division ran considerably less.

Q. That is down as low as 6 per cent?

A. Yes, sir.

Q. What per cent of the line is in wooded territory?

A. I couldn't tell you.

Q. You have no information on that?

A. No.

Q. Is it much?

A. Yes, there is a considerable extent, especially in the eastern and southern part of the state.

Q. Where this 30 per cent occurs?

A. Yes, I have seen it many times personally, where you [fol. 3144] go up on top of the hill and see your line running out through the country, and it looks like it had been cut through the woods with a knife.

Q. This trimming you are talking about here is not the trimming in connection with the building of the line?

A. Oh, no.

Q. That is just the trimming in connection with the survey?

A. Yes, sir.

Q. And the trimming in connection with building the line, cutting down trees and so forth, is reflected in your unit costs, as you get it from the experience of the company.

A. It is reflected to a small extent, but I do not think nearly to the extent you would have if you were attempting to reproduce the property.

Q. You are not attempting, however, to get that conditional element into the case, are you?

A. No, sir.

Q. Have you any information as to what number of poles is affected by the 6 per cent and what by the 30 per cent figure that you have used?

A. Not any recent information, no.

Q. What is the best information you have on that?

A. That was an estimate arrived at by scaling our maps, showing the location of pole lines on private right-of-way, and on public right-of-way over the different toll lines, and it was made some three years ago, I think.

Q. What did it show as to the number of poles in this district where you say it is about 6 per cent on private right-of-way?

A. Well, it showed, for instance, on the western division, [fol. 3145] as against a total of 31,448 poles that there were 1,937 of them on private right-of-way.

Q. That was in the western part of the state?

A. Yes, sir.

Q. How in the eastern and southern part?

A. In the eastern division, as against a total of 48,011 poles I found 12,238 on private right-of-way.

Q. You haven't any information as to the number of poles in those respective districts, that is, the total number?

A. No, I have not.

Q. Now, I notice on page 63 your price for cross arms in the toll pole line system is $3.64, whereas in the exchange pole line system the price for cross arms, which are the same average size, is $3.44. What makes that difference of 20 cents in the unit price?

A. The difference is due to a slight extent to the mis-

cellaneous material, probably associated with exchange poles as against toll poles, but it is more due to the labor, the labor on the exchange poles being derived from an analysis of actual costs covering exchange pole line construction. The costs for the toll pole lines were developed by analysis of costs covering toll pole line construction. Now, the elements of wage scales, traveling costs, board and lodging, would enter into that, and in connection with the toll cross arms, I was able to obtain estimate completion reports covering almost exclusively a little over 10,000 poles, by which I got a toll cross arm cost. That cost is $1.634 for direct labor, plant supervision and tool expense.

[fol. 3146] Mr. Burr: What do you mean by "almost exclusively"?

The Witness: Almost exclusively toll cross arms to the extent of a little over 10,000 cross arms.

Q. What were these estimate completion reports covering almost exclusively a little over 10,000 cross arms?

A. Estimate numbers 1072, 1055, 1003, 637, 594, 645, 616, 595, 539, 376, 491, 482, 460, 442, 428.

Q. And these were just for the placing of the cross arms, these estimates?

A. There were about 50 poles in that, for which the labor was taken out, leaving the labor for 10,007 cross arms.

Q. What is the practice with reference to attaching cross arms? Are they usually put on separate from the pole, that is, after the pole is set?

A. Sometimes they are put on one way and sometimes another.

Q. These were jobs mostly in which they were put on poles after the poles were set?

A. Yes, sir.

Q. Is that what you mean when you refer to the exclusive feature of these specifications?

A. I mean by the exclusive feature that the total labor expended in these cross arms covered only a very few poles, but that the big majority of the labor was for nothing else than placing cross arms.

Q. You have eliminated those where the poles——

A. I have not eliminated the ones where the poles were in, but I have eliminated the labor for the poles, leaving the labor for cross arms only.

Q. Now, just state the result of your study there with

reference to those specifications? How did you make your [fol. 3147] analysis and what was the result?

A. I had a total on those estimates of $8,815 direct labor and $6,530 for stable and garage expense and sundries. The amount of labor eliminated for those poles was $517, and for the stable and garage and sundries was $341, leaving me for direct labor for the cross arms, $8,298, and for the stable and garage and sundries $6,189. Dividing each of these items just mentioned by the 10,007 cross arms, gave me for direct labor $.892, and for stable and garage and sundries, $.618. That was loaded with plant supervision and tool expense at 22½ per cent, which is the average which I used over all those accounts, amounting to $.187, giving me a total of $1.016. Adding in my stable, garage and sundries of $.618 gives me $1.634. That is the figure that I used for my labor.

Q. And your material was how much?

A. Rather I used $1.63 even, and my material was $2.01, giving me a total of $3.64.

Q. And that study you made without any reference to your Youngstown units, but by a direct study of this company's experience on these 10,000 cross arms?

A. Yes, I was able to get that direct.

Q. I think you testified you had the benefit of that study with reference to your exchange cross arms?

A. I compared my exchange cross arms with what I had derived from toll, and having based my exchange cross arms on an actual analysis of exchange costs for the total pole lines, and then having come to a figure that was very close to my toll cross arms unit cost, I felt that the ex- [fol. 3148] change cross arms was justified by that comparison.

Q. But you did not use the same figure for the two?

A. No, sir.

Q. As I remember it?

A. Oh, no.

Q. Now, your toll aerial cable account is next, I believe. Now, as I understand your testimony in chief with reference to the toll aerial cable, you say the unit costs are obtained from the same sources as that already derived for exchange pole lines with the exception of loading cases. Do you mean by that that you have used the same unit costs?

A. I used the same placing labor cost to begin with. I used a slightly different miscellaneous unit derived from a consideration of the amount of messenger, bonds, grounds, and guards that would be used in toll aerial cable construction, arriving at a cost of 4 cents per foot for these miscellaneous items, and——

Q. Did you apply that——

Mr. Burr: Isn't that wrong, exchange pole lines?

Mr. McConnaughey: I think it is. That is what I want to know.

The Witness: No, I think that is right. It is from the same sources.

Q. If you did not use the same unit prices, tell us how you did do that.

(Question read.)

A. When I say that I used the same costs, I mean that I used the same placing costs for toll aerial cable that I did for exchange aerial cable. To that I added this 4 cents [fol. 3149] per foot labor for the miscellaneous items that I have just described, and to the sum of those figures I added a percentage for splicing labor based on 50 per cent. of the placing labor. Now, that is a different percentage than I used in my exchange cable construction, due to the fact that I considered various jobs of toll cable placing and splicing. For instance, I considered that while in exchange aerial cable I had 60 per cent. for placing and 40 per cent. for splicing, toll cables are generally large cables, they are composite construction, and they have more testing and more work in connection with the testing than exchange cables do, and also I considered that in the costs of the Maumee-Detroit cable——

Q. In the costs of what?

A. The Maumee-Detroit cable. Our placing costs and splicing costs ran respectively 48 and 52 per cent. In the Youngstown-Cuyahoga Falls cable I found our placing costs 40 per cent. and our splicing 60. Now, taking all of these things into consideration, the type and amount of testing necessary, the relative costs for splicing and placing on these toll cables just mentioned, and the conversations that I had with various plant and engineering people relative to the respective advantage of placing and

splicing, I came to the conclusion that I should use 50 per cent. for placing and 50 per cent. for splicing, in other words, that the total labor in toll aerial cable construction was divided about 50-50 between placing and splicing, so that I loaded onto my placing costs the same amount for splicing costs.

[fol. 3150] Q. How did you get your placing cost?

A. As I said in the beginning I used the same placing cost as for the exchange.

Q. Now, on page 65 of your Williams' Exhibit 7-B, under the heading of "Toll Aerial Cable, Composite Cable," the first item eight quad, 13 gauge, indicated as belonging to the A. T. & T., 48 quad, 16 gauge, 9 quad, A. T. & T., and 39 quad, Ohio Bell Telephone Company, 26 pair, 19 gauge, Ohio Bell Telephone Company exchange, you fix a unit cost there of $1.00. How did you arrive at that unit cost?

A. The unit costs shown there are the Ohio Bell Telephone Company's proportion of the total unit cost, that is, it is 55.3 per cent of the total unit cost. But I should correct that by saying that it is the Ohio Bell Telephone Company's toll proportion of the total unit cost, because we first eliminated the proportion owned by the A. T. & T., and then for the purpose of this account, toll aerial cable, we eliminated the portion of exchange, leaving as the Ohio Bell Company's portion of toll 55.3 per cent. Now, that $1.00 is 55.3 per cent of the total unit cost of $1.812. That total unit cost of $1.812 was simply the sum of $1.238 for material and $.574 for labor. That labor cost of $.574 is made up of the placing labor of $.247, this miscellaneous cost of 4 cents per foot that I referred to, making a total of $.287 for placing labor, to which was loaded, as I stated a while ago, the same amount, $.287 for splicing labor.

Q. These splices that you have been talking about are the point at which the different sections of the cable are [fol. 3151] joined together.

A. And where the loading coils are spliced into the cables.

Q. What are the intervals between splicing?

A. I don't recollect that, Mr. McConnaughey.

Q. Would there be as much as one in every three or four hundred feet?

A. They might average that close. I don't think that would make much difference in the total, for the reason that what I did not throw into splicing labor as taken from actual costs, I did throw into placing labor.

Q. You figured it out on a basis of percentage which you have explained heretofore?

A. Yes, sir.

Q. Let me call your attention to an item at the bottom of that page, 65. The item is 25 pair, 16 gauge toll and 126 pair 22 gauge exchange, of which you priced 45.34 per cent as toll, I assume that there should be a corresponding item in the exchange aerial cable, showing the remainder of 100 per cent, the difference between 45.34 and 100 per cent as exchange?

A. That is right.

Q. Covering that same item?

A. That is right.

Q. And that is the way that division between toll and exchange property where the item is used for both purposes, is made throughout?

A. That is right, and the proportion of the unit costs for toll cable is included in the toll cable, while the balance of the unit cost, a proper proportion is included under exchange.

Q. Now, that same item appears on page 5 as 26 pair, 16 gauge toll and 126 pair, 22 gauge exchange; are we to assume that that is merely a mistake in the number of pairs [fol. 3152] in the toll part of it? I notice there is 25 pair in one instance and 26 in another.

A. There is usually 26 pairs. Sometimes it is written up as 26 and sometimes as 25.

Q. The same thing happens at the top of the page.

A. Yes, sir.

Q. Now, Mr. Williams, you have testified with reference to the value of the right-of-way, fixing a value of $1,940,501 as the value of the right-of-way of this property, and you arrived at that by taking 3 per cent of certain items in the inventory. What were those items?

A. The overhead and underground distributing systems.

Q. Why did you pick 3 per cent as the basis? Have you any costs that justify that figure?

A. I have seen costs that I believe would justify a higher figure than that.

Q. What have you seen that would justify a higher figure?

A. I have seen receipts signed by people to whom rights-of-way payments were made. I have seen statements of

right-of-way costs, running as high as 15, 20 and $25 per pole.

Q. What did you base your 3 per cent on?

A. Partly on that sort of information and partly on the fact the Commission had been allowing 3 per cent for the same item.

Q. Who had been?

A. The Public Utilities Commission of Ohio.

Q. You are referring to the Public Utilities Commission of Ohio?

A. Yes, sir.

Q. Did you make any calculation or study or detailed estimates to arrive at your 3 per cent?

A. Not for this particular purpose, but I assigned in mak-[fol. 3153] ing an original study made by the Commission.

Q. In what case was that?

A. It is my recollection that that was in the Cleveland case,

Q. How was it studied in the Cleveland case?

A. Why, it was arrived at, if my recollection is correct, by taking the actual disbursements for right-of-way of the Cleveland Telephone Company over a period of time, and comparing them with the construction costs of overhead and underground distributing systems.

Q. When was that done?

A. That was done about 1915.

Q. Did the Commission adopt 3 per cent as the basis in that particular case?

A. It is my recollection that they did.

Q. And fixed a value in accordance with it?

A. Yes, sir.

Q. What was the title of that case, do you know, or the number?

A. I think it was 196, wasn't it, the old Cleveland Telephone case?

Chairman Marshall: 192 or 6, I forget which. It was one-ninety something. Do you want to get it, Mr. McConnaughey?

Mr. McConnaughey: No, we can look that up afterwards. 192 or 196 is close enough.

Chairman Marshall: I think that is correct. It is one of those two if I recall.

Q. Is it your understanding that it has been the policy

of the Commission to allow that amount in all cases since that time?

A. I have never seen a case—I have seen a great many cases in which the Commission has made allowances for [fol. 3154] right-of-way, and I have never seen one, to the best of my recollection, that the same percentage was not allowed.

Q. Have you seen any decisions, or do you know of any, in which the Commission was considering a state-wide situation, such as we have here, including toll and exchange and a great variety of exchanges, small and large, big cities and little villages?

A. No, and I do not know what the Commission would have done if they had. But I know what I think about it.

Q. Why do you think that 3 per cent is a proper amount?

A. Partly based on that study and partly based on these costs I have seen of the Ohio Bell Telephone, and I think I stated in my direct testimony I thought 3 per cent is conservative. I do not actually believe you can reproduce that right-of-way for that figure.

Q. Have you any records or have you seen any records, have you examined the right-of-way account—put it that way—of the Ohio Bell Telephone Company in connection with this study?

A. No, sir, because that will not reflect the true cost.

Q. Why not?

A. Because it does not include all of the costs even for salary and wages for men who are obtaining rights-of-way. A lot of our right-of-way is obtained by engineers, plant superintendents, and people of that kind, for which the expense does not get into the right-of-way account.

Q. How do you know that if you have not examined the records?

A. Because I know the way that is handled, the way those [fol. 3155] expenses and salaries are charged as a matter of general information.

Q. Well, the Commission's system of accounting requires the allocation of these different items to separate accounts, doesn't it?

A. It does.

Q. And where an engineer was doing several different things at the same time, he is supposed to distribute his services among the different accounts that he serves, isn't he?

A. If he is not doing too many things in the course of the day, he is, but I imagine many times——

Q. You have stated a number of times this company keeps its books and records in accordance with the requirements of the Interstate Commerce Commission's accounting system?

A. Yes, sir.

Q. You say you would not follow this account particularly, because charges are not made to that account?

A. Yes, and I do not think it is possible for the company to go into the fine detail of charging every hour of time, every bit of expense to which it is put; if it were, our accounting system would be a great deal more expensive than it is now.

Q. The company has a right-of-way force that attends to this?

A. It has a right-of-way force that takes care of part of it.

Q. Who does the rest of it?

A. These supervisory people I speak of.

Q. You say it is not the custom for people who do incidental right-of-way work, to turn in their accounts for their services for charging against the right-of-way account?

[fol. 3156] A. No, sir, I don't think that it is.

Q. These men then are engaged in an operating function and performing a constructive function, but they make no distinction between the two in making their reports, is that correct?

A. There is a division made between the cost of their time as between construction and operation or construction and maintenance in connection with the direct labor charges.

Q. Then if he distinguishes accurately between operating expense and construction expense, it would be in some construction account.

A. Well, he does not make the distinction. That is made on the basis of direct labor charges.

Q. Are you able to point us to any specific study that you have made of this company's records to justify your 3 per cent?

A. No specific study, no, sir.

* * * * * * *

[fol. 3157] Morning Session

Tuesday, December 7, 1926.

And thereupon the further hearing of this matter was resumed, pursuant to adjournment, before Honorables Charles C. Marshall, Chairman, George T. Poor, and Frank B. Maullar, Public Utilities Commissioners.

Appearances:

Mr. Karl E. Burr, on behalf of The Ohio Bell Telephone Company;
Messrs. W. S. McConnaughey and Fred W. Postle, on behalf of the State of Ohio;
Mr. L. F. Laylin, on behalf of the City of Columbus;
Mr. John B. Harshman, on behalf of the City of Dayton.

Chairman Marshall: You may proceed.
Mr. McConnaughey: If the Commission please, when we adjourned the last time we were in the midst of the cross-examination of Mr. Williams. Mr. Sloan is here today, and it would be an accommodation, I think, to him and to everybody else if we take him up at this time, and that is satisfactory to us.
Chairman Marshall: All right, Mr. Sloan.

[fol. 3158] And also W. F. Sloan, called for purposes of cross-examination, having been heretofore duly sworn, testified as follows:

Cross-examined.

By Mr. McConnaughey:

Q. Mr. Sloan, do you recall when it was when you testified here in the so-called toll rate case in which you testified to a value of the toll property of this company as of March, or as of some date in 1923—September 30, 1923?
A. Do you mean the date that I testified?
Q. Yes, about the time.
A. No, I do not think I recall the exact date, Mr. McConnaughey. I assume it was some time in 1923 after that date. I have forgotten the exact date of the hearing, however.

Q. The exhibit that you filed shows that it was filed in March, 1924; that is approximately correct?

A. I presume that is correct, yes, sir.

Q. Now, what valuations of telephone properties did you make between that time and March, 1926?

A. Between the date of that hearing——

Q. Yes, between March, 1924, and March, 1926; in those two years?

A. March, 1924 and March, 1926; well, now, I am speaking just from memory; I don't know that I can give you all of them, but I appraised all of the properties of the New England Telephone and Telegraph Company in five states, and I appraised the property of the Chesapeake and Po- [fol. 3159] tomac Telephone Company in West Virginia and Maryland, and the District of Columbia, and I imagine ten or twelve small properties in various parts of the country, a number of which I believe I mentioned in my other testimony.

Q. How about the Illinois property?

A. Yes, perhaps there were a number of other properties; it is rather difficult to call them offhand.

Q. And when did you appraise the Cincinnati and Suburban Bell Telephone Company's property?

A. Well, we started—just a minute—we started that in September or October, last year.

Q. What appraisals have you made of telephone properties in Ohio, aside from the toll rate appraisal and this statewide appraisal that you have put in in this case?

A. Do you mean besides the Cincinnati property?

Q. Yes, besides that; that you have already mentioned.

A. Well in that particular span of time that you have set out, none. Of course we did appraise the Dayton property prior to that.

Q. When did you first become acquainted with the telephone property in the State of Ohio?

A. I was in the army; I was attached to the Postmaster General's staff during the period of Government control, and I was sent here by the Postmaster General. It seems to me it was early in 1919. There were a number of matters to be taken up in arriving at compensation contracts between the telephone companies and the Government, and [fol. 3160] I was here for two or three weeks on that work.

Q. Well, that, as you testified in chief, was with inde-

pendent companies, was it not; that is, not with the Bell companies?

A. Yes, sir, that was entirely independent companies.

Q. What was the nature of that work in writing compensation contracts; just what was that?

A. Well as I recall—I did not write any contracts myself; I collected the data as to their earnings for a period of two or three years prior to that time in order to secure data which would enable the writing of the compensation contracts.

Q. What were the compensation contracts that you speak of?

A. Well, the Government took possession of all the wire lines of the country and entered into contracts with the owners of those properties to pay them a certain amount for the use of the property during the period that they were retained by the Government.

Q. That was only with the independent companies, as you say?

A. Well that is all I had to do. Of course they did write compensation contracts with the Bell system besides that.

Q. Now was that your first acquaintance with the telephone companies in the State of Ohio?

A. It seems to me it was; I do not recall any case prior to that.

Q. Following that you made a valuation of the Columbus property—of the Bell property in Columbus?

A. Yes, sir.

Q. At that time it was then owned by the Central Union [fol. 3161] Telephone Company?

A. Yes.

Q. All of these valuations for so-called Bell companies have been made under employment for the company, have they not, by you?

A. Well, I have appraised Bell properties, for instance, at Louisville, Kentucky. I appraised the Bell property there and I was representing the city.

Q. Yes, but I mean these that you have mentioned.

A. Yes, they have been for the company.

Q. And this valuation of the Columbus property was for the company?

A. Yes, sir; that is correct.

Q. And that was what year?

A. Well I think it was in 1919; I am quite sure that was the date.

Q. That was immediately following your compensation contract experience here?

A. Well, yes, sir; that is after I was discharged from the army.

Q. Then the next Ohio work that you did was the Dayton valuation in 1922; is that correct?

A. Yes, I think that is correct as far as I recall.

Q. And what was the next?

A. It was either the toll case or—you see, I appraised the Cincinnati property twice. I guess I did the toll case prior to the first Cincinnati appraisal.

Q. The toll case was appraised in 1923, as of September 30, 1923.

A. Well in 1923 I also appraised the Cincinnati property, but for the time being I forget which I did first; I rather think the toll property.

Q. And you have appraised the Cincinnati property a [fol. 3162] second time?

A. Yes, sir.

Q. And made this statewide appraisal?

A. Yes, sir.

Q. Is that all the appraisals of Ohio property that you have made?

A. That is all that I recall. We jump around so much, Mr. McConnaughey, and there may have been a small one, but I do not recall any other.

Q. So that during all the time from 1919 down to the present time, from time to time, you have been checking up on prices of telephone property in this state?

A. Yes, sir, more or less ever since 1919.

Q. Your method of valuing properties is to go into the books of the company that you are valuing, or their records, and determine the costs as they have occurred to them as shown by their records, is it not?

A. Well that is one of the lines of evidence that I get. Very seldom do I use the exact results that I obtain that way.

Q. But your investigation or your pricing always includes that, as a part of your check, does it not?

A. Oh, yes; I always make a study of their actual construction conditions.

Q. So that you have been familiar with prices in Ohio ever since you made the Columbus valuation in 1919?

A. That is true.

Q. Now tell us how the cost of construction of telephone property in Ohio compares with that of West Virginia and New England and these other Bell companies that you have investigated, in general.

A. Well it is about the same; perhaps slightly less as I [fol. 3163] recall. I have not made any direct comparisons of those things, but as I recall it is slightly less than West Virginia or New England states. It is slightly greater than that of Cincinnati.

Q. Now were you able to discover any cause for this difference as you made your investigation?

A. Oh, I think there are some very obvious reasons why——

Q. Why the costs should be higher in Ohio?

A. Well higher, for instance, than the Cincinnati costs, yes, sir.

Q. What are the obvious reasons?

A. Well the outstanding reason is that the Ohio property is a scattered property; it is a statewide property, and the overheads are naturally greater. That is, Cincinnati is a small, compact company in one county. They do not have travelling expenses, their trucking expense is very minor as compared to a state, where you send gangs all over the state. As a recall the wage rate is three or four cents higher in Ohio, as compared with the Cincinnati wage rate.

Q. What is the wage rate in the State of Ohio?

A. Well, it varies for different accounts. As I recall the wage rate which we use for aerial cable is about 80 cents, I think—let me verify that,—77 to 80 cents, I believe is the composite rate. Yes, the aerial line gang rate is 80½ cents. That is the productive hourly rate.

Q. What is that; the productive hourly rate of wages for what?

A. For line gangs.

Q. And that is the rate in Ohio—I mean in the state-wide case?

A. Of the Ohio Bell Telephone Company, yes, sir.

[fol. 3164] Q. And what is the corresponding rate in Cincinnati?

A. Well, now, I do not recall offhand, but I think it is 77 or 75.

Q. Well, now——

A. It is two or three cents lower than this rate, as I recall. Of course you understand I am just giving these figures from memory as to Cincinnati, but I think that I am right about that, Mr. McConnaughey. To elaborate on that answer a little more, I do not think the wage rate, however, is the explanation of the difference in cost, so much as the fact that in a statewide organization you are bound to have a very considerably greater amount of supervision.

Q. Why is that?

A. Well you have got to have your organization worked from the central point or a number of central points, and then you have to have these gangs going over the whole state.

Q. That is because of the widespread character of the organization, it requires more supervision?

A. Yes.

Q. And that costs more than the actual work—I mean more increase over Cincinnati conditions than the actual work.

A. Do you mean the supervision is more than the work?

Q. No.

A. Oh, no. The proportional amount is greater. Besides that, with gangs that are working out from headquarters your trucking expense and expenses of that character are greater. You have to transport your men greater distances, and haul your material greater distances.

Q. Would that be true on a comparison between exchange [fol. 3165] prices as in the statewide case and the Cincinnati and Suburban Bell Companies, on the prices of exchange property; would that be true on a comparison of the prices or cost of construction of exchange property, comparing the Ohio Bell Company with the Cincinnati and Suburban Bell Company?

A. Oh, yes, because the only conceivable way you could build this property would be with mobile gangs. You would not organize a gang in one city and complete that job and then discharge them.

Q. Now you are talking about your reproduction theory —your theoretical reproduction, I should say. What I was

asking about was the cost of production as it is reflected in the books of these companies.

A. Well I still maintain that the costs would be greater in a widespread territory than in a condensed area like Cincinnati.

Q. Now, what has been the trend of prices of telephone construction in Ohio since you first became acquainted with the property, comparing, for instances, what you found in 1919 and what you found in 1922?

A. Well, going back prior to that a little, prices of telephone equipment and labor started rising in the latter part of 1916 and they continued through 1917 and 1918 and reached the peak about July, of 1920, and then prices started to recede. I think they dropped off very rapidly until the latter part of 1921 and then they slightly increased and then there has been a rather gradual decrease since that time.

Q. Well you say——

A. I don't know; I think they were kind of flattened out, or dropped down; I think that increase started—or dropped [fol. 3166] —it dropped down in 1920, and then had a slight increase and then it has been kind of curving down and flattening out. I think they have reached a more or less stable base now.

Q. You say it reached the peak in 1919?

A. In 1920—the early part of 1920.

Q. Then there was a dropping of prices—quite a marked drop?

A. And another rise—not a very large rise.

Q. It did not go up to the peak of 1920?

A. Oh, no.

Q. And when was that second rise you speak of?

A. I think it was, as I recall—I have not looked at the index factors lately, but I think it was late in 1921 or early in 1922.

Q. You think it was late in 1921 or early in 1922?

A. Yes, sir.

Q. And since that time there has been a decrease and a flattening out, as you say?

A. Yes, that is true. I might add to that answer that prices now of telephone construction—I am not speaking of general index prices, but of telephone construction in

general,—are between about 55 and 60 per cent higher than the prices as of 1913 or 1914.

Q. And how do they compare with prices as of, say, 1922?

A. Well, I don't know.

Q. Well from what you said a moment ago——

A. I think they would be a little lower.

Q. A little lower now than they were in 1922?

A. Yes, I think so.

[fol. 3167] Q. Since that time the tendency has been downward, and now you think it has reached about a stable level?

A. Approximately so; there are bound to be certain fluctuations, but I think it is more nearly stable than it has been for a number of years.

Q. Well, now, on the occasion of each one of these investigations of Ohio telephone property, have you gone over the records anew and made a new study for the purpose of fixing your prices?

A. Yes, we tried to get data that was suitable for the particular kind of property we were appraising at the time.

Q. And you did that in 1922 when you made your toll rate appraisal?

A. Yes, sir.

Q. I should say 1923—I said 1922, and I should have said 1923; that was when you made the toll rate appraisal, was it not?

A. Yes, sir, I think that is when; what is the date of the appraisal?

Q. It is made as of September 30, 1923. (No reply.)

Q. Now, I call your attention, Mr. Sloan, to your appraisal of toll line poles in the statewide case, Sloan Exhibit A-1, at page 108; have you a copy of that here?

A. No, I have not a copy of that here.

Q. I will show you this copy. On that page there is an item of a 115-foot pole, which you appraised in this case as of June 30, 1925, at $200. You appraised that same pole in 1923 at $225.

A. There is just one of those poles, is there?

Q. Yes, there is just one of those poles.

[fol. 3168] A. Well, I will tell you, a pole 115 feet in height—most any appraisal—I do not think either figure is adequate for a pole of that height. Those figures are taken on an individual pole of that length. You just have to estimate it the best you can.

Q. Why do you estimate it at one figure one time and at another figure another time?

A. Well in the first place because the two methods are different.

Q. What was the difference in the methods?

A. In the toll appraisal, the property was—such items as anchors and guys and steps and miscellaneous equipment of that kind, were appraised separ-tely, but in the statewide case all poles have been loaded with a factor of about 20 per cent—19 per cent, I think is the factor, to cover anchors and guys and so forth. So if you will divide that $225 by 119, I think you will find that the answer is really less, than the figure given in the toll appraisal.

Q. Will you show me where in your toll appraisal you appraised these anchors and guys and other accessory material?

A. Apparently they are not set out here,—just a minute; I have rather forgotten this toll case. My explanation does not hold; but the difference of $25 on an individual pole of course is—it has no particular meaning, because there is only one of them in the plant, and it is very difficult to estimate such a pole.

Q. That is your explanation. Now the next item on that page 108 is a 130-foot steel tower which you appraise in this [fol. 3169] case, the statewide case, in your Exhibit A-1, at $375, and which in the toll property case, was appraised at $950; how do you explain that difference?

A. Well, I don't have any explanation. I rather think $900 is too much for it.

Q. And when did you find that out and how?

A. Well, perhaps in this statewide case we may have found some data as to the actual cost of it.

Q. Do you know, as a matter of fact, whether you did or not?

A. No, I do not recall.

Q. What was the basis of your valuation in the toll case?

A. Well it was our best estimate of the individual structure. Of course it is just a single tower sticking up there. It may be that the toll figure is the more accurate; I do not recall.

Q. You are not able to say today which is the right figure?

A. No, sir.

Q. And both of these valuations are of record in this case

and subject to consideration by the Commission in determining this value?

A. In these two particular items I would not say which is the most accurate because there are only two of them in the plant, and to actually answer your question would mean an actual study of the cost of those two items.

Q. You are supposed to have made that in making this valuation; you say you did not do that?

A. Oh, of those two items, no.

Q. Now on that same page 108, there is an item of a 30-foot pole of which there are 63,192.2 in the system, the [fol. 3170] total value of which is $1,792,131.00, as you show in this statewide case. Your unit price in this statewide case is $28.36.

A. What is that that you have, that you are reading?

Q. The statewide case. Now in the toll case that same item was appraised by you at $32.06. How do you account for the difference?

A. Let me get the two items straight. I have never compared these two appraisals, so I will just have to go a little slow. The toll figure was $32?

Q. Yes, the toll figure was $32.06, and the statewide figure $28.36.

A. Well there was a drop in the price of poles for one thing.

Q. Now I wish you would analyze for me the price of that 30-foot pole as you appraised it in this statewide case as of June 30, 1925.

A. All right; these are toll poles aren't they?

Q. Yes, these are toll poles.

A. That was a 30-foot Class C pole?

Q. Yes.

A. $28.36?

Q. That is your unit price.

A. All right; the cost of the pole delivered was $9.16; the labor is $9.17; the supervision and trucking expense is $4.73, giving a total of $23.06. Now the factor which I mentioned before—I said 19 per cent, but it is 23 per cent, was put on top of that to cover the anchors, guys and so forth, which are not listed in the inventory, and which gives $28.36.

Q. 23 per cent for accessory materials and——

A. That is per cent, not cents.

Q. 23 per cent, I said.

[fol. 3171] A. And that brings that price to $28.36.

Q. $28.36?

A. Yes, sir.

Q. Now what was the basis of your toll price in 1923?

A. Well I have not that data with me, Mr. McConnaughey; I can not answer that. I presume it was a smaller amount.

Q. Can you tell us what the price of these poles was in 1923?

A. No, I cannot, but there was some recession in prices since that date.

Q. Can you get that for us?

A. I can, yes, sir.

Mr. Burr: Will you have someone make a list of the things he asks for?

The Witness: Mr. Cook is making a list. You want a similar set-up for that same pole?

Q. Yes; how did you determine your labor cost for poles in this present appraisal, the statewide appraisal?

A. Well the first thing I did as I believe I explained in the other hearing, was to analyze actual construction records of the company.

Q. And what records did you analyze?

A. Well there are two kinds of records; the work done on specific estimates which represents their larger undertakings and work done on routine estimates, which is the day-to-day work. We analyzed the specific estimates.

Q. Did you analyze all of the specific estimates?

A. Yes; all within the period of 1922 to 1925.

Q. 1922 to 1925; that is, you went over all of the specific estimates from 1922 to 1925 on the erection of poles?

[fol. 3172] A. Well I could not say that we used all of them. We examined all of them, and in case of abnormal construction costs we eliminated some of the specific estimates where the costs were obviously higher than normal.

Q. Did you take each specific estimate, one by one, and analyze them all in that way?

A. Well yes; we made certain studies of each one to see whether they were abnormal, and then we took the composite result in arriving at the basis for our—or as one of the bases for our unit costs.

Q. Well now, have you any data as to the estimates that you actually used in determining the price here on these poles?

A. Yes; as a matter of fact we have all of these specific estimates that we used. We have drawn off the figures from those estimates.

Q. Have you them here?

A. No, they are over at the hotel. We can bring them over in fifteen minutes.

Q. Well I wish you would.

A. If you would like to have them, Mr. Cook can get them.

Q. All right, we would like to have them. Is your labor unit the same for each of the poles that are listed here; have you used the same labor unit for each one of the poles on this page 108 of your exhibit?

A. No, the labor varies with the size of the pole.

Q. The labor varies with the size of the pole?

A. Yes, sir.

Q. There is, then, a different unit for each size of pole?

A. Well each size as to height; not each size as to class. I think we put all—the labor on all 30-foot poles would be [fol. 3173] the same, whether it was a Class-C or Class-A pole.

Q. You recall that in this appraisal the poles were all average Class-C?

A. That is right.

Q. So there is only one value?

A. Yes, I had forgotten that.

Q. Now what would be your labor unit for a 15-foot average Class-C pole?

A. You are still speaking of toll poles, I take it.

Q. Yes, still speaking of toll poles, on page 108 of your appraisal.

A. For a 15-foot pole?

Q. Yes.

A. Well that particular pole is $11.10, isn't it?

Q. $11.10 is your unit price.

A. Starting with an 18-foot and going up to 65-foot, we figured out the price for each kind; on a 15-foot and above 65 we projected the curve so I cannot give you the detail on a 15-foot pole.

Q. Do you mean that you based the 15-foot and those over 65 feet on the other poles?

A. Projected as a curve, yes, so that any one between 18 and 65 I will be glad to give you the details on them. That particular one, though——

Q. It is too bad that I am curious about that particular one that you cannot give me.

A. Well, I am sorry. There were not—as I recall there were not very many of them.

Q. Then you have the details for your 18-foot pole?

A. Yes, sir.

Q. Give me those.

A. All right; the cost of the pole delivered is $2.25; the labor is $5.19; the supervision and trucking expense—now when I say "trucking" that includes board and lodging [fol. 3174] of gangs away from their base—$2.68; giving a total of $10.12 to which has been added 23 per cent for other equipment, bringing the price to $12.45. Is that the price that is in the inventory?

Q. Yes, that is the price that is in the inventory. Now that 23 per cent is a constant factor clear through?

A. Yes, sir that is a constant factor clear through.

Q. Now I wish you would give me the details of the price of that 25-foot pole.

A. That is $21.19?

Q. Yes.

A. The cost of the pole is $5.60; the labor is $7.67; the supervision, trucking and board and lodging is $3.96; total, $17.23; plus 23 per cent gives $21.19.

Q. And in your toll inventory that pole was appraised at $19.10. That happens to be the only one as I find it excepting those two large poles I called your attention to a while ago, that was less in the toll case.

A. Well——

Q. Now what is the reason for that?

A. I cannot give you——

Q. I mean it is more.

A. Yes, it is more in this case; I cannot tell you except that we had—well, we had more construction of a later date, to arrive at our units. I think the total unit is perhaps a little low.

Q. You think that this unit is a little low—that is the toll unit is low?

A. I would think so, because I think these units here are

very conservative as a matter of fact in the present case. How much low is it—what is the figure?

[fol. 3175] Q. The toll inventory is $19.10; the present inventory is $21.19.

A. $2.09; well, I think we are a little low in that toll unit because as a matter of fact there has been a drop in the price of poles since the date of the toll inventory.

Q. You have no explanation to offer then, on that?

A. No. This was an independent calculation, based, of course on all the data we had in 1923 plus the additional work that has been done since then, and it is a very conscientious piece of work. We did it very carefully, and it is—the unit arrived at in this appraisal, is my judgment of what it would cost today to do it.

Q. And the unit you arrived at in 1923 in the toll rate case was your judgment of what it would cost at that time?

A. Yes.

Q. And notwithstanding the fact that poles cost less you say that particular kind of a pole costs more to put in?

A. It would seem so. I never made this comparison you draw here. I did not know there was such a difference, as a matter of fact.

Q. And you have no other explanation to offer than what you have offered?

A. No, I have not, because the details of the toll appraisal have rather escaped me; I have forgotten.

Q. On page 109 of Sloan Exhibit A-1——

A. That is this case?

Q. Yes, that is this case, which is the list of your toll aerial cable appraisal, your unit price on 11-pair, 16-gauge aerial cable is 44½ cents per foot.

A. That is correct.

Q. That is the price in place, as I understand it?

[fol. 3176] A. That is correct.

Q. Now how did you establish that unit price?

A. I think I have got the details of it here; that is 16-gauge 11-pair, isn't it?

Q. That is right, 16-gauge, 11-pair.

A. There is a slight difference between the prices I have here in the book and the ones in the report. For instance the 5-pair is .38 cents in the book and it is .383 here; and on the 21-pair it is .552 and the book shows .550. Now the price that I have for 11-pair in the report is 44½ cents, but

the price in the book is 44 cents, so I will give you that price. That is apparently the one. I will give you this figure here, Mr. McConnaughey.

Q. All right.

A. On the 11-pair cable, 16-gauge, the cost of the cable is $212.07. Now I might point out that that includes 3½ per cent for waste, that is splicing and so forth. And that is the cost of 1035 feet. The freight is $7.09. The reel damage, splicing material and messenger is $47.24. Now the sum of those should give—oh, the supply expense is $14.78. Now that should give $281.18.

Mr. Burr: That is correct, $281.18.

The Witness: Now the labor is $154.86.

By Mr. McConnaughey:

Q. $154.86?

A. Yes, sir; now the total of that should be $436.04.

Q. What was that labor figure?

A. $154.86.

Q. And what was the other total?

A. $281.18. Now we put one per cent on top of that for miscellaneous extras which were not included in the splic- [fol. 3177] ing material and messenger, which should bring it to $440.40. Apparently I am a half a cent off. It may be there is another detail of that here; but that is substantially correct.

Q. For some reason you adjusted that to 44½ in the appraisal.

A. Yes, I raised it on that one, but on practically all others I reduced it.

Q. How did you determine the labor cost of your aerial cable?

A. In much the same way as on poles, by analyzing the toll cable estimates.

Q. And can you give me the estimates that you analyzed?

A. Yes, sir; Mr. Cook will bring those over with the others.

Q. Now in your toll case appraisal your unit price for this same item, 11-pair 16-gauge cable, is 24 cents.

A. 24 cents?

Q. Yes.

A. Well there is something wrong with that; I cannot

account for that. The material alone is practically that figure. That figure is too low, because the price of the cable has not changed greatly between the two dates, and that price in the toll appraisal is not more than half a cent more than the actual cost of the material.

Q. What has been the change in the price of cable between those two dates, and which direction has it been up or down?

A. I think we have some data here that we can give you on that. I think it has been slightly down, if I recall properly. It looks to me like what we have done in the toll case is to put the material price alone in, without any labor on it.

[fol. 3178] Q. Well have you any data from which you could determine what you did?

A. I have in Chicago; I haven't got it here. The toll price is certainly inadequate. It could not be put in for that. We have a table here that gives a change in price of cable and each change date since November 1st, 1924; that is slightly after that date, but it may throw some light on it. Let us take one; here is a 16-gauge cable. The price on November 1st, 1924, was $196.50 for this same kind of cable, and on December 1st, 1924, it was $207.30; January 1st, 1925, it was $217.30; February 1st, 1925, it was $234.60; May 1st, 1925, it was $215.40, and on June 1st, 1925, it was $204.90.

Q. Have you any information or recollection as to the price back in 1923?

A. That would be about a year prior to this time—no, I have not.

Q. What is your recollection about it?

A. Well, I must confess I am at a loss to know just what happened in that 12 months period there. I presume—or I think it was slightly higher.

Q. But you do not know?

A. I can find out what happened in that 12 months; I do not happen to recall off-hand.

Q. All right; suppose you find that out. Those prices that you have given, are those the Western Electric prices?

A. Yes, sir.

Q. Where did you get your material prices on all of these appraisals?

A. They are Western Electric prices to associated companies.

Q. So far as the materials are concerned, did you find [fol. 3179] that the prices for a given time were about the same for all these companies that you appraised for the various Bell companies?

A. As of a given date, they are the same except the difference in freight to the different points.

Q. Now the next item, Mr. Sloan, on the same page, 109, is 51-pair, 16-gauge aerial cable which you have appraised in the statewide case at 79 cents—your unit price is——

A. 79½ cents?

Q. Well the 51-pair, 16-gauge is the one that I want to call your attention to.

A. Well that is 79½ cents, isn't it?

Q. Yes, 79½ cents.

A. There is only 11 feet of that.

Q. I know it does not amount to much, but I am trying to get at your method.

A. There is that same little difference in price; the price in my note book is .798, instead of .795. The report shows it .795, and my detail shows .798, but I will give you this from the stand here; the cost of 1035 feet of cable is $520.81; the freight is $14.69. The reel damage, splicing material and messenger is $61.72. Now the supply expense is $33.20. Now that should give you $630.42. The labor is $160.20. Now that should give you $790.62, to which we added 1 per cent for extras not included in splicing material or messenger. That gives you $798.00, and we used $795.00. I cannot explain that little difference.

Q. Why did you use 1035 feet in all of these calculations?

A. To account for the waste in cutting the cables and so forth.

Q. You made an allowance for that in the price, didn't [fol. 3180] you.

A. Yes, sir.

Q. What is this 3½ per cent for splicing and so forth?

A. Well that is it; that 35 feet is 3½ per cent.

Q. You did not put that in the price?

A. We just figured that many extra feet.

Q. And then divide that by 1000?

A. Yes.

Q. I see. Now I wish you would tell us the process by which you get that labor price of $160.20 as applied to that size of copper.

A. Well the process is very similar to that employed——

Q. Will you give us the process, using the figures by which you made that calculation?

A. On this particular size?

Q. Yes.

A. Well that we do is to—I think I will tell you the process first and then show you the figures.

Q. All right, sir.

A. We take all of the cable we can get in the case of aerial cable in general; we took about 650,000 feet of cable—well anyhow over half a million feet of cable of all sizes. We found records of the construction costs of that many feet of cable of different sizes. Now we plotted those cables by sizes, that is starting at the small size and going up to the large size, and applied—we took some theoretical units of the time required to erect each of the various sizes of cable.

Q. Where did you get those theoretical units?

A. We made them up from engineering estimates, estimating, as many engineers do, about what it ought to cost to do a certain job.

[fol. 3181] Q. Is that based upon experience of your own or checking other people's experience?

A. Experience of the cost of this kind of work in various parts of the country.

Q. Well do you have a set of unit costs of that kind of your own, that you apply in all of these inquiries?

A. Yes.

Q. That is entirely independent of the experi-nce of the company——

A. Yes, sir.

Q. That you are investigating?

A. Yes, sir; they are based—well on the estimates of gang performance. What they are as a matter of fact is the performance that you can expect from a gang of workmen under ideal conditions.

Q. Now are those units that you used always the same units; do you always use the same units as your tentative units?

A. Oh, no, I don't, because I modified those by the wage rates that are in force in the locality where I am working.

Q. But the time performance element would be the same, would it?

A. I think in general that is true. Perhaps occasionally we modify it where it is obvious that there is some peculiar

situation that we have to account for. But I would say in general that the tentative units that we use for testing—well, as a matter of fact we use any standard set of units. We only use it as a test, as a matter of fact.

Q. Well, now, in this statewide appraisal, what units did you use?

A. Would you like the man hours for each size cable?

Q. No, I mean whose units were they?

A. Oh, they were ones that we made up ourselves.

[fol. 3182] Q. They were not the Youngstown units that Mr. Williams used?

A. Oh, no; I worked independently of Mr. Williams. I do not know what he did. Did he testify that he used Youngstown units?

Q. Yes.

A. Well, I don't know the Youngstown units.

Q. All right; now you applied these tentative unit costs; that is where you had gotten in explaining your process when I interrupted you.

A. And we find how the performance as it actually took place, compares with those tentative units, which are somewhat ideal and suited to favorable conditions, and we may raise or lower the tentative units somewhat. But in no case have we raised those tentative units up to the actual performance as shown by the company, although we have made some adjustments.

Q. And you determine the actual experience of the company by checking these work estimates or reports as you have testified to heretofore?

A. That is correct.

Q. Now is that all there is to the method?

A. That is substantially the method.

Q. Now having explained the method will you take this particular item of 51-pair 16-gauge cable and tell us how you applied them on that to get this result?

A. Well, you understand that we applied the method to all of the various sizes in this group of 650,000 feet of cable. Then we automatically raise or lower the man hours for each of the items in the group, so that we did not take the 16-gauge cable out by itself and just find the unit for that from the records of the 16-gauge cable.

[fol. 3183] Q. I know, but I want you to tell us what you actually did in order to come to this result.

A. Well I guess I better read just what we did. Here is a list, Mr. McConnaughey, of 2 pages of the various types and the footage for each type that we drew off from the specific estimates and the actual total number of hours that was required to erect this cable was 121,799 hours. That was the actual time to erect this cable that I have described, totalling about 600,000 feet or more. Here it is listed here, the height and footage of each kind, and here is our man hours. We used 146 man hours for this size and so forth. The application of our tentative units to the footage gave 119,578 hours. That is, we are about 2 per cent below the actual performance, so we just let that stand that way.

Q. Now what were the jobs that you used in making that check?

A. Do you mean the code number of the specific estimate?

Q. Yes.

A. Well I guess we will have to get that out of these books. Now, if you would look at this as I talk, perhaps I can explain it. Here are the dates of the estimates in this first column; the date that the estimate was closed.

Mr. Burr: You are now referring to what, when you say "here"?

The Witness: I am referring to a book of sheets which contain the details of the specific estimates which we used in arriving at our unit costs for aerial cable.

Mr. Burr: Very well.

The Witness: Now this column, which is the third col-
[fol. 3184] umn on the sheet, gives the estimate number and the approximate location where the work was done. Here is estimate number 675, for instance, which was in Cleveland; estimate 624 was in Akron; estimate 613 was the East d-vision, wherever that is; Estimate 586 was in Toledo, and so on down the list.

The next fourteen columns on the sheet indicate the grouping of the cable in the various sizes; that is the cable was drawn off of the estimates by sizes and recorded in its proper column on these sheets.

Q. The size referring to what?

A. Why gauge and length. The heading of each column shows the gauge and the entry in the column shows the feet of that particular gauge.

Q. Does not the column also show the number of pairs as well as the gauge—the head of the column?

A. Yes it does, that is correct. Then in the succeeding columns are shown first the total cost of the cable.

Q. That looks like total feet of cable to me.

A. It is the total feet of cable. The next column shows the total hours required to do the job; the next column shows total cost of the major material which would be the cable, and possibly the messenger, and some of the larger items. Then the next column shows the minor material, which is the smaller material used in the job.

Then the next column shows an item which is called "Exempt Material" which is small material which is not specifically accounted for.

The next column shows the total material cost.

[fol. 3185] The next column shows the supply expense.

The next column shows the labor.

The next column shows the supervision under the various sub-heads to which it is charged on the books.

Q. What are the various sub-heads; what do you mean by that?

A. Account 690 is the sub-head which represents charges to General Expense.

703 is the account covering tool expense.

705 is general engineering, and 706 is direct supervision—or plant supervision; plant supervision and the supervisory engineering combined.

The next two columns—or the next column—shows the percentage. Those next two columns are not shown on the books of the company. That is data that we derived from——

Q. Well, what is it—what do you show there? It is headed "Percentage of labor".

A. On the sheets we have used here we find out what percentage of the total expenditure was labor; the percentage of sundries. Those are dollars. The next column are sundries and the next column shows the split-up of the stable and garage expense and the last column on the sheet shows the total cost of the job.

Q. What do you mean by the split-up of the stable and garage expense?

A. Well that stable and garage expense is included under this general account of "Miscellaneous"; so we wanted to

determine separate data as to the actual cost of stable and garage alone as separated from the board and lodging and other expenses of that kind.

Q. Is that shown on these accounts?

[fol. 3186] A. No; we had to dig that out of the records themselves.

Q. Now in the first item on this sheet that you have attempted to describe, the estimate number 675 for Cleveland, under the head of "total hours". There are several different figures given with a letter beside each one; will you tell us what the significance of those figures is?

A. Yes; "L" I think is Line Crew—just a minute; it is the different character of labor that worked on that, and I think we have the data for that. There are so many hours of one type of labor and so many hours of another, and so on.

The code letter "C" means "Cable Splicers." "L" means Line gangs.

After talking with Mr. Cook it seems that "U" is the code letter for underground cable gangs, and "W" is the code letter for common labor.

Now if we are in error about the significance of those code letters we can be corrected.

Q. Now those several different classes of labor went into the doing of what?

A. The erection of that 6704 feet of cable. You see there are several pages here.

Q. Now what dates are covered by the estimates that you examined in getting at this data?

A. Well I find here in referring to the completion, estimate 675 was closed in August, 1923.

Q. What is the date of the first column there, "1/3/24"?

A. Strike out my other answer there. The date of the closing of 675 was January 3rd, 1924, but the bulk of [fol. 3187] the work was done in August, 1923.

In the case of estimate 624 the estimate was closed on January 24, 1924, but the bulk of the work was done in January. That was a small job, only 318 feet of cable. That is August 25, 1924.

Mr. Burr: For what?

The Witness: For the date of closing the estimate, but the bulk of the work was done in January, 1924.

Mr. Burr: You refer to what estimate number?

The Witness: 624.

And thereupon a recess was taken until 1:30 o'clock P. M. of same day.

[fol. 3188] Afternoon Session

Tuesday, December 7th, 1926.

And also W. F. Sloan, resuming the stand for further cross-examination, continued his testimony as follows:

Cross-examined.

By Mr. McConnaughey:

Q. Mr. Sloan, you have before you, as I understand it, one of your working papers which is a summary of closed estimates of exchange aerial cable which you used in your study of the costs of The Ohio Bell Telephone Company in developing your unit costs; is that correct?

A. Yes, sir.

Q. Does this sheet contain all of the estimates that you studied in that connection—the specific study?

A. I think it does, yes.

Q. This is after you have eliminated those that you thought showed abnormal characteristics, as you testified this morning?

A. Well, now, let's see whether it is or not; that proof test will show that. It may be that this is all of them, Mr. McConnaughey; I will have to check that up. These are the estimates that we used; that is the total as shown in this book.

Q. Is this a continuation of it?

A. Well, 2C means aerial cable—those sheets there, about six pages of them.

[fol. 3189] Q. I asked in my previous question with the understanding that there was on this first sheet a list of all the estimates as to which there are some details given on subsequent sheets; is that correct, or am I mistaken in that?

Mr. Burr: Read that question, please.

(Question read.)

Mr. Burr: That is not a complete question. I do not understand it.

Q. Will you answer the question?

A. Well, the general list of estimates is contained on two sheets which are indicated by the code number 2C, and also by the further code number 242. Does that answer your question?

Q. Well, there are a certain number given on there; what is the significance of this "1" in a circle, and then "242"?

A. There are two pages numbered "1" which constitute, as I understand it, the general list of all of the specific estimates which we used.

Q. Isn't it a fact that the two sheets which are marked "1" are a list of the specifications with some of the data, and a second sheet, also marked "1", gives additional data with reference to those same estimates?

A. Yes, that is true.

Q. Then there is another sheet marked 242, with "2" in a circle, followed by another sheet similarly marked which give a further list of specifications with some additional data with reference to these specifications; isn't that correct?

A. I think that is correct.

Q. That is the arrangement?

[fol. 3190] A. Yes; there are two pages marked "3" that have additional data.

Q. What I am asking these questions for, Mr. Sloan, is to be sure that you have before you all of the specifications for work involving exchange aerial cable work that you used in developing your unit costs; now are these three sheets that you have indicated all that you had before you in making this study?

A. Well, now, I cannot answer that; I don't recall whether there were additional sheets of the estimates which we did not use. Any way these are the ones we did use.

Q. You did use these?

A. Yes.

Q. Well, when I say "specifications", Mr. Postle calls my attention to the fact that I should have said "Specific estimates"?

A. That is correct.

Q. Now I call your attention to specific estimate No. 586 done in 1923 at Toledo, as to which your sheet shows $414.00

of major material and $337.00 of labor. Is that a normal percentage of labor?

A. I imagine that is rather high; it is a small job.

Q. 1997 feet of cable involved in that job. I call your attention to specific estimate No. 624 at Akron, 318 feet of cable, in which the material item was $344.00 and the labor was $142.00; is that a normal job?

A. Well, that seems to be more nearly normal than the other one, yes. Let's see what this percentage is here—well, yes. Just let me refresh my mind on what are normal percentages. There is no such thing as normal percentage of labor material except as you relate it to a specific size [fol. 3191] of cable. That is, if 33 per cent of the material cost on a 25 pair cable is normal, certainly that percentage is not normal on a 600 pair cable. That is, in order to answer your question directly, I would have to get a composite size of the cable in each estimate.

Q. Well, I am trying to determine, and I call your attention to estimate No. 494, work done at Toledo in 1923, as to which it is shown that the major material was $978.00, labor $735.00; is that a normal job?

A. Well, I would have to look back and see what the size of that cable was. I think we can tell.

Q. Just add one more factor; that shows 6296 feet of cable, does it not?

A. Yes, sir.

Q. A pretty good sized job?

A. That is a fairly good sized job; and there were 1138 feet of 25 pair cable and 5158 feet of 50 pair cable. That is practically the entire amount of cable in those two sizes. Now let's see what the normal percentage of labor on a 50 pair cable is; on that size of cable the normal relation of labor to material would be about one-third—a total of about half of the material.

Q. In this instance I call your attention to it is about 80 per cent, isn't it?

A. Yes, it is a little bit high in that case.

Q. Is there anything to indicate the reason why it was high in that case on your notes, or within your knowledge otherwise?

A. Yes—no—wait a minute; the ratio I gave you there was for 50 pair. That was a composite of both sizes. The [fol. 3192] ratio on a 25 pair cable is—it is 112 divided by

146; that ratio jumps way up on small size cable because the material drops down but the labor don't go in proportion. I imagine that thing isn't so very far out of line. It is 112 divided by 147. The normal ratio would be about 77 per cent on a 25 pair and about 58 per cent on a 50 pair. But even so it would appear to be slightly high in this particular estimate.

Q. But you don't know why it is high?

A. Well, no.

Q. And you did not consider it worth while to eliminate that from your figures?

A. Oh, no, because while I have not eliminated any high ones like that, I have also not eliminated any low ones.

Q. Now here is one; Estimate No. 441, done in 1922, in the Southern Division; what is that Southern Division?

A. Well, that is the Southern construction division of the State; I don't know just what area is involved.

Q. The material there was $617.00 and the labor was $805.00; the labor was more than the material; is that a normal condition?

A. Well, we will see what size cable that is. Well the cable is 300 feet of 100 pair, about 800 feet of 200 pair, 288 feet of 300 pair, and 30 feet of 51 pair; assume that that would average about 200 pair.

Q. Well, will it?

A. There is 250 feet of 50 pair cable, 272 feet of 100 pair [fol. 3193] and some small lots of big cable and then there is—I really ought to weight it out. Well, assuming that it would average about 100 pair the normal relation would be—what is the ratio?

Q. It is $805.00 for labor and $617.00 of material?

A. Well, that particular one seems rather high.

Q. Well, here is another one.

A. Well, I will read the low ones too, Mr. McConnaughey.

Q. Well, that is up to you. Perhaps I will read some of them too. But for the present I am reading this. Estimate No. 440 shows major materials $656.00 and labor $1226.00?

A. That seems rather high.

Q. Here is another one; Estimate No. 924 for work at Columbus; the major material is $818.00 and the labor is $830.00.

A. Well, now, there is a factor here that we have not discussed. Perhaps this material may be partly made up of

terminals and things besides cable which are involved in the cable estimates which would entirely change the ratio, so that you must know all of the facts of the material make-up before you decide whether they are too high or too low.

Q. You have a column here called "Minor material"; wouldn't that include the terminals?

A. No, they would be major materials.

Q. Well, you say this is abnormal?

A. Well, let's see whether there are many terminals in there. There are 18 terminals involved in that, and there is another one over here, so you cannot judge that offhand without making an exact analysis of it.

Q. Well, now, just a moment; I call your attention to [fol. 3194] the next one, No. 423, also at Columbus, where there were 562 feet of aerial cable involved, and the material cost is $94.00.

A. Well, of course that one——

Q. And the labor $371.00?

A. That was a small job and did not get only its proper weighting in the use, or in the determination of the unit. I would like to point out that most of the estimates——

Q. Just a moment——

Mr. Burr: Let him finish his answer.

Mr. McConnaughey: He is not answering my question. He is volunteering.

Mr. Burr: I think he has a right to explain his testimony.

Mr. McConnaughey: He can explain any answer to my questions.

Mr. Burr: I ask the Commission to allow the witness to explain the testimony which has just gone before. The witness was interrupted in the midst of his answer.

Mr. Postle: He was not answering the direct inquiry.

Mr. McConnaughey: He can state it if he wants to, but I would like to conduct this examination in my own way.

Chairman Marshall: Counsel has a right to ask questions and the witness—he is away above mediocre. He can answer it, and if he has any explanation he can make it. That is the rule. Any explanation you want to make to any answer, you have a right to do it.

Mr. McConnaughey: I am not interfering with that.

[fol. 3195] The Witness: I will make a little statement later that will cover it.

By Mr. McConnaughey:

Q. Now the next item, No. 422, is 3908 feet of cable involved, and the material cost is $725.00 and the labor cost is $852.00; is that normal?

A. Well, you notice there was 3500 feet of 50 pair cable in that, 344 feet of 100 pair and 12 feet of 200 pair; there were about 32 terminals on there. To really answer your question I would have to analyze the weighting that the terminal labor and the cable labor bore to the material in order to answer it. Any particular estimate in the thing will vary from what you might call normal. It is only by considering a group of them that you arrive at something to base a conclusion on.

Q. Now, having called your attention to these particular instances, Mr. Sloan, I wish you would state just exactly how you used these estimate reports in arriving at your unit costs?

A. Well, before I answer that question directly, Mr. McConnaughey, I think it is no more than just that I should point out something. You have selected the smallest estimates in this group where the conditions as you view them are somewhat abnormal. I would like to read you some of the larger estimates where the opposite condition prevails.

Q. Well, I wish you would answer my question, Mr. Sloan.

A. Well, I cannot. You have asked me to explain why I have used it.

Q. No; I asked you to explain what use you made of it, [fol. 3196] not why you used it; just tell us how you used it.

Mr. Burr: I think the witness is entitled to make the explanation. He was denied the right awhile ago and he said he would reserve the explanation and make it later. Now he is undertaking to point out respects in which some of these specific estimates differ from others by classes, and it seems to me he is entitled to do it.

Chairman Marshall: Do you object to the question?

Mr. Burr: No. The witness said before he answered the question that he would like to make an explanation.

Mr. McConnaughey: I have no objection to his making the explanation, but I want him to answer my question. There is a proper time to make all explanations he wants

to. It may be at the close of his testimony or upon redirect-examination; I don't know where; but while he is on the stand under cross-examination, he should answer the questions that are put to him, it seems to me.

Chairman Marshall: Read the question.

(Question read.)

Chairman Marshall: The general rule in all my practice in many years in this position is that the witness can answer the question and then he has a right to make any explanation he wants to. So if he can answer the question, why, he asks you to do it, and then you have a right to explain. I don't know whether you can answer that question.

The Witness: Yes, I can answer it.

Chairman Marshall: That is the rule that I have always seen followed.

[fol. 3197] The Witness: Well, I will answer a specific answer to the question and make some comments on it. As I explained in the first instance I gave such consideration to the whole work order record of the company as, in my judgment, was proper. I gave some weight to these specific estimates that Mr. McConnaughey has read into the record. I only gave such weight, however, as they bore to the total, and I started to point out that the ones which he read are in most cases the smaller estimates and had very little effect on the answer which I arrived at. Does that specifically answer your question?

By Mr. McConnaughey:

Q. No. I would like to have you say just exactly how you used these estimates and your analysis of them in arriving at your unit prices for aerial cable—exchange aerial cable?

A. Well, all right.

Q. And I would like in that connection, if you can and will, to use the figures that you used, the calculations you made to arrive at whatever figure you arrived at.

A. Well, I tabulated the quantities of various kinds of material as contained in these sheets which we have been discussing, in a column; I also tabulated all of the various kinds of cable and all of the various telephone terminals and

equipment as listed on these sheets. Then I applied to them a tentative set of units which in my judgment were normal for erecting that class of property.

Now in making up that comparison I not only used the small items that you have indicated and read into the record, but I also used the larger ones which you have not men- [fol. 3198] tioned and which have a much greater weight, and where the proportion of labor and material was much smaller than the ones which you have indicated. It might be interesting to note that this was not the only factor which I used in determining my units. It was simply a guide. The actual units which I used were the tentative units which I applied and which I did not change after finding how close my tentative units came to the actual result as indicated here.

Q. Now, Mr. Sloan, I will ask you again, and I insist upon an answer to my question, that you give the process that you applied in order to determine your unit costs for aerial cable, giving us the calculation that you made and the figures that you used for that purpose, in this direct question, without any lecture upon what the system was or anything about it; just tell us what you did.

A. I am sorry if you think I am lecturing you. I am trying to tell you without reading a whole mass of figures into the record, but I think the only——

Q. Well, I am foolish enough——

Mr. Burr: I object. Let him finish his answer.

The Witness: If you want it I can take these two sheets out of my notes and put them in the record, or copy them, in which the specific classification is set forth. Here are two sheets in my notebook in which the quantities are tabulated from the sheets in the specific estimate book, tabulated in a vertical column. These figures are taken from here (indicating).

Q. Let us see that.

[fol. 3199] A. Here is the 50 pair, 71,000 feet; 100 pair, 73,000 feet; 200 pair, there was approximately 23,000 feet. Now those figures which are arranged in this vertical column are the quantities which we studied. Against those quantities were applied a set of tentative unit man hours for doing that kind of work, and a product was obtained which is shown in the fourth column. Now that represents

the total number of hours that it would take normally to erect that amount of cable and terminals.

Now that total comes out to 119,578 hours.

Now the actual hours that it did take to do the job, as shown from the specific estimates, was 121,799 hours. So that the test units which I used and which were finally adopted in the report give an answer that is 1.8 per cent less than the actual time required to do the work.

Now that is briefly the best way I know how to explain it or answer your question. I can put these sheets in the record if you wish.

Q. All right, suppose you put that into the record, or a copy of it?

A. I will make a copy of it and put it into the record. Those two sheets which I will put into the record I think are a direct answer to your question.

Q. Well, they do contain figures and details of what you did, as I understand?

A. That is correct.

Q. With that understanding I am willing to accept that as an answer. Now I want to ask you a few questions about that. Now in this sheet, or these two sheets that you are to produce for the record there are five columns, in the first of which you list items, "Cable Pile"——

[fol. 3200] A. That means paper insulated lead covered.

Q. In the second column you give the size of the cable. In the third you give the quantity, which I understand is in feet?

A. In the case of cable it is in feet, and in the case of terminals it is in items.

Q. And the next column is test man hours?

A. That is right.

Q. Now that is an ideal set of test figures that you applied from your experience in investigating a property of this kind?

A. Yes.

Q. And you do not use in this column the man hours or the time that is shown to have been expended in putting up this kind of work, as shown by these estimate reports, do you?

A. No; I took that from my own experience and from my own files as being normal.

Q. Then you multiply the man hours by the quantity?

A. That is right.

Q. Now in the first line here, the quantity for 22 guage 26 pair cable is 3362 feet; is that 3362 feet?

A. Yes, sir.

Q. And the test man hours is 146?

A. That means 146 man hours to erect 1000 feet of 22 guage 25 pair cable, including the messenger and the rings and the splicing.

Q. Then that should be multiplied—the quantity should be multiplied by treating these in thousands or putting a decimal point——

A. Three points after you have your product.

Q. Now tell me, Mr. Sloan, how by that process you get [fol. 3201] the experience of the company reflected in your unit price, having used nothing from these estimate reports excepting the quantity or different classes of material that is included there?

A. Well, if the tentative units which I call my test units are based on my experience as an engineer as being normal costs or normal lengths of time required to do a certain amount of work under wholesale conditions and I find that the actual experience of the company, from actual records, checks with that within a reasonable percentage, why, I accept their records as being in line with my experience.

Q. Now in this exhibit that you will produce you have the actual hours in gross applied to this group of estimates at the bottom of the statement, haven't you?

A. Yes.

Q. And it is not set forth as to each separate item?

A. No, sir. That figure set forth as to each item is shown on these other sheets in column No. 18, the time required for each estimate.

Q. Well isn't Column No. 18, instead of being the time required for each estimate, the number of feet of cable?

A. You are right.

Q. You have the hours in the next column?

A. Column No. 19, I should have said.

Q. No. 19 is the number of hours?

A. Yes, sir, you are right.

Q. Then you have the result of 119,578 hours of labor—or you have the result of 121,799 hours of labor which are [fol. 3202] shown by these estimate reports and which you have checked by comparison with the man hours that would be required according to your test figures?

A. Yes, sir.

Q. Now where did you get those test figures, Mr. Sloan?

A. Well, I have been in this business about 19 years, Mr. McConnaughey and I have studied unit costs and costs of construction under all sorts of conditions in that entire period of time, and they are the result of many years of study of the actual costs of telephone construction, and are based on a pretty extended study of this kind of work.

Q. And according to that experience it would normally take 146 hours of labor to install 3362 feet——

A. No; 1000.

Q. Or 1000 feet of cable of that size?

A. Yes, sir, that is right.

Q. Now getting up to some of these larger sizes, what is the largest size that you show there?

A. There is some 900 pair there. No company uses very much above 400 pair in aerial cable. Occasionally they use short lengths of 600 and 900 pair.

Q. You have a figure here for 909 pair cable, and that figure is 349 hours per thousand feet?

A. 349 hours to erect 1000 feet of 900 pair cable.

Q. Now it takes longer I assume on account of the greater weight, etc.?

A. It is a very stiff cable and it takes longer to splice it. That figure includes splicing it; and the messenger which supports it is a very much heavier messenger, which takes more time.

[fol. 3203] Q. Here is a 606 F cable, to which you called my attention as calling for an interesting explanation. The man hours on that is 2738?

A. For 1000 feet, yes. F cable means silk and cotton or wool covered cable, and it is used ordinarily in lengths of 15 to 25 feet. It is the terminal cable going from a manhole up to the switchboard. There is a splice on it, ordinarily for not more than 25 feet, and the other end is fanned out in a long fanlike structure which is attached to the terminal blocks on the switchboard.

You will notice the quantities are very small, 15 feet of 600 pair and 24 feet of 300 pair; so the labor per 1000 feet is very high on that kind of cable.

Q. Because it is handled in small quantities and for short lengths?

A. Yes, sir. Now I would like to make that little explanation I started to make before.

Q. Well, now, just a minute, please. Now point out the things that you want to point out and that you have been trying to for some time; go ahead.

A. Now you must consider that these small jobs which you have pointed out, the company necessarily has to do some of that kind of work even in a wholesale construction program; but take big jobs; here is Estimate No. 500 at Dayton; there were 27,000 feet of cable put up. The material was $9682.00 and the labor was $3100.00, which was about 33⅓ per cent approximately—a little less than that.

Here is a case of 17,800 feet of cable which was erected at Columbus. The material was $8763.00 and the labor was $2618.00. Now those kind of estimates have received a far [fol. 3204] heavier weighting in arriving at the unit costs than the small ones you have enumerated.

Q. Because there was more of them?

A. Yes.

Q. I was trying to find out whether you had actually eliminated all of the things—of the estimates, that showed abnormal conditions, and you recall that I asked you in each instance whether it was normal or not. I appreciate exactly what you say.

A. Well, by "normal" I do not mean that you must eliminate every job where the cost has run high, because we all know that any program that you can conceive of you are going to have to meet unexpected difficulties.

Q. Well, your testimony was such as to lead us to believe that you had eliminated that sort of thing, and now you say you did not; you put in some of the abnormal things so as to get a real picture?

A. Surely; not only up, but down; I put both the high and the low in.

Q. Then you have not tried to keep it close to the normal?

A. Oh, yes, I think my tentative units are normal; that is why I used them, and I have not departed from them, and they are the units I finally used.

Q. They are the units you finally used in this case?

A. Yes, sir.

Q. You did not change the price for the purpose of this test at all?

A. No, sir.

Q. You stuck to your own units?

A. That is correct.

Q. Now in this list of specific estimates, or estimates [fol. 3205] that you used, you have indicated in one of the columns the time when the work was done?

A. When the bulk of the work was done.

Q. And I notice that with the exception of I think three or four estimates it was all done in 1922 and 1923; is that is that correct? Just look them over.

A. Well, there is 1923, 1924, 1923, 1922—well, I would say they were done in the three years of 1923, 1924 and 1925.

Q. How much was done in 1924?

A. And 1922—well, let's see; I think we have tabulated them by years. Here we have made this tabulation here. This is not all of it but it gives you an answer.

In 1922 there was a total of 215,000 feet.

In 1923 there was a total of 232,000 feet.

In 1924 there was a total of 202,000 feet, about.

Q. Now wait a minute; in 1924?

A. I guess that is all in 1924; at least there was that much in 1924, 201,916 feet.

Q. Let us see that.

A. There were 85,795 feet in 1925; so we have tried to scatter it over the last three or four years as closely as we could, Mr. McConnaughey.

Q. I see. And your total is 208,112 feet; is that correct?

A. For 1924?

Q. No, for all?

A. No; the total——

Q. Isn't that the final total?

A. No, there was that much in one year. We have that figure here. It was 651,000 feet I believe—654,066 feet, for all of the years we considered.

[fol. 3206] Q. And do you know how many thousand feet of cable the Company erected in those four years—total?

A. Well, no, I do not, because we have not considered any of the cable that they erected on routine estimates, which was the small from day to day jobs.

Q. Well, now, I wish you would tell me, going forward from the point that you reached when you established this 98.2 per cent figure, just how you arrived at this unit cost of 79.5 cents for that particular size of cable?

A. Well, let's go back and find out what that size of

cable was; I have forgotten which one we are talking about.

Q. Well, I have too.

Mr. Postle: It is 11 feet of 51 pair 16 gauge.

The Witness: Well, that particular size of cable, that is 51 pair, 16 gauge, the unit price is 79½ cents per foot. Now the material cost—I guess I can give you that in a lump—is $630.42.

Now the hourly rate was 77 cents. Now going back to our tentative units for that kind of cable, the man hours is 150 man hours; now multiply 150 by 77 and you get $160.00.

Q. How is that—150 by 77? That is $115.50.

A. I see. I took dollars instead of hours. I read dollars there. 195 hours and 77 cents; that should give you $160.00 for labor.

Q. It gives me $153.45.

A. $150.15. There is something wrong there. We put it down 160 in here. There is evidently an error there. What we did was to use $160.00 when we apparently should [fol. 3207] have used $150.00; there is evidently a ten dollar error there because it should have been 195 hours.

Q. Well, that would be 15 cents per foot then, wouldn't it—that would be 15 cents per foot—that 195 hours per thousand feet?

A. Well, that would be—instead of—you take your material, $630.42, and instead of adding $160.00 you would add $150.15; that would give you $780.00, and then you put one per cent on that for material not included, which would be $7.80 more; so the correct answer should be 7.88 instead of what we used, 7.98, which would be about one cent a foot difference. Apparently we made a slip there.

Q. Well,——

A. That would make about 11 cents error in the report.

Q. Well, I was not looking for that eleven cents; you can have it. I am trying to find out your method, Mr. Sloan, and I think maybe we know it now, excepting I would like to ask you a little more about your test man hours. Those are your own figures, those man hours?

A. Yes, sir.

Q. Those are based on your experience in the various investigations that you have made?

A. That is correct.

Q. Well, now, are they taken off out of the experience of any of these companies in any way, or is it your own observation of the performance of labor by men, or how did you get at it originally?

A. Well, I don't know as I know exactly how I did get at it. I told you I take this same process in prac- [fol. 3208] tically every appraisal that I make, and before I do it I talk to the line foreman; I always try to get in touch with line foremen and construction people, and I find out from them what kind of gangs they used and ask them how many feet of cable they can erect in a day and how many splices they can make in a day, and I tried to build up a study of units in various localities that are based on normal experience of a man doing work.

Q. In any of these investigations that you have testified that you have made in Ohio, have you had occasion to change your test figures in any way?

A. Well, as I recall Cincinnati, the actual performance was slightly less.

Q. In Cincinnati it was slightly less?

A. I think it was.

Q. And you did reduce your man hours required for various processes there?

A. I think so, I would have to refer back to the Cincinnati units to say. I did not make any direct comparison between these two jobs.

Q. But you did—to start with you used the same units in Cincinnati as you did here as your test units, didn't you?

A. I think that is correct.

Q. And if you found that the actual performance down there was different you had to make an adjustment?

A. Yes. I did find this in Cincinnati, that their loading percentages, that is, for supervision and trucking and teaming, were not as great as they are in the State of Ohio as a whole. In fact, I might say that I never found [fol. 3209] costs as low as they were in Cincinnati—that is, on a considerable property.

Q. Now in the toll rate case as of September 30th, 1923, your unit cost for this same item of property was $1.01?

A. Do you mean for that 50 pair 16 gauge cable?

Q. Yes; it is called 51 pair here—no, that is not right; wait a minute; it is 63 cents here.

A. How much?

Q. It is 63 cents. I was looking at the 14 gauge cable, I think. It is 63 cents, and your price in the toll rate case was 63 cents on that figure; how do you account for that difference, Mr. Sloan?

A. Well, I don't know; it looks like the toll price was too low, because, as in that other size you pointed out, the material cost alone here was 58 cents; so I know if the material alone, including the cable and messenger, is 63 cents—what did I use?

Q. 63.

A. Well, that is not enough to cover the material. It must be that that toll unit is too low because my total material only, without any labor whatever, is $630.42 for 1000 feet. That is 63 cents a foot. So it looks like I have two or three items in that toll case that are on the material base only without any labor.

Q. Well, look at the next item, 7 quad 16 gauge; in the present case you have that appraised and your unit price is 52 cents?

A. Yes.

Q. In the toll rate case it was 27 cents; how do you account for that?

A. 27?

[fol. 3210] Q. Yes.

A. For 7 quad?

Q. Yes.

A. It is too low—well, that price is too low because that is the equivalent of about 15 pair 16 gauge cable, and the price of the material only would be more than 26 cents.

Q. Well, the next item, 8 quad; in this case it is 55 cents and in the toll rate case it was 30 cents; what have you to say for that?

A. Well, all I can say is the material only is—as of June 30th—was as high as the price you are reading out of the toll rate case. I am sorry I haven't the details of those other units with me.

Q. You say wherever that sort of difference appears, which price is right?

A. I am sure those prices are right.

Q. Well, they are both in evidence in this case, you know?

A. The prices in this Statewide case are as of June 30th, 1925; you can check the price of the material only yourself and you will find it goes higher than the price used in the toll case.

Q. Well, what explanation have you to offer for that?

A. I can't offer any except that we slipped on it. That is about all I can say.

Q. Well, now, I will say to you that I have taken the trouble to go through practically all of the items of that aerial cable appraisal and similar differences appear all the way through.

Mr. Burr: I move to have the statement stricken out.

[fol. 3211] Mr. McConnaughey: All right, strike it out. I will go through and ask him about each specific one then.

Q. The next item is 5 pair, 19 gauge; the present appraisal is 28.12 cents, and in the toll rate case it was 15 cents; what is your explanation of that difference?

A. Well, the explanation is bound to be the same for all of them except I am speaking at a disadvantage; I haven't the details of the toll units with me; I am convinced that these prices are based on conditions as they were in June, 1925.

Q. On page 111 of this same inventory, which is your exhibit——

A. Are you speaking of the toll or present case?

Q. The present case, your Exhibit A-1, page 111, there is an item of composite cable—let's see if we can find that; here it is, the first item on that page; have you that page there?

A. Yes, sir.

Q. At the top of the page there is some composite cable, 8 quad and 13 guage, 48 quad 16 guage, 51 pair 19 guage.

A. 13 feet?

Q. 13 feet; upon which your unit price is $1.79½ cents, and in your toll rate case you have appraised that same item at $2.23?

A. Well, that seems more like it ought to be, assuming that there has been some recession in the price of the cable.

Q. Well, has there been a recession in the price of the cable.

A. Well, I was looking into that at noon. I think there has been a slight one, but I will have to look up the actual [fol. 3212] price list to see.

Q. Isn't it a fact that there has been an increase as between September 30th, 1923, and June 30th, 1925, rather than a recession?

A. Well, we didn't have that data that I spoke of before lunch; it might be that there has been; I don't know.

Q. How would you explain the fact that that particular unit is so much less?

A. I cannot explain it.

Q. That is 49 cents—44 cents.

A. There is this to be taken into consideration, Mr. McConnaughey; in this Statewide case we had a vastly greater amount of data to derive our units from than we had in the toll case. In that case we considered only toll construction, and furthermore there has been a very considerable amount of toll plant, especially in the cable line, added since the toll line appraisal; so that we have made no attempt to make any comparisons between the original appraisal and this. We based it on conditions as we found them.

Q. Well, in studying those company records for the purpose of getting these costs you did not consider anything but toll aerial cable, did you?

A. We considered both exchange and toll; much of the work is the same.

Q. You made no distinction in your study?

A. Oh, yes.

Q. Did you apply the same unit costs to the toll aerial cable as to your exchange aerial cable?

A. No, sir, not on quad cable or composite cable.

Q. How about straight cable, did you use the same [fol. 3213] prices there?

A. As far as performance is concerned, but not as far as trucking is concerned. There would be more trucking on toll cable.

Q. Well, you have no explanation to make of that difference then, as I understand you?

A. No, except this, the item you were discussing is only 13 feet; it is practically a negligible item.

Q. Yes, you have called my attention to that a number of times, Mr. Sloan.

A. Well, one item is 11 feet and the other is 13 feet.

Q. Nevertheless I think it is up to you to explain some of these things.

A. Well, I am giving you my best judgment on it.

Q. Now on page 110 also there is 19 quad 19 guage cable.

A. Page 110?

Q. Yes, 110; that is straight cable, as I understand it?

A. What item do you refer to now, Mr. McConnaughey?

Q. 19 quad 19 guage, the last item of the first group there, which in your State-wide appraisal you have appraised at 58 cents, and in the toll case it was appraised at 34 cents; what explanation have you to offer for that?

A. The same explanation; I don't think the material alone could be bought for much less than 34 cents.

Q. Well, the next item, 6 pair 22 gauge; your appraisal here is 29.74, and in the toll rate case it was 20 cents; what is the reason for that; nine cents difference there?

A. I don't know. The toll figures that you are recalling [fol. 3214] seem to be unusually low.

Q. Well, I am calling your attention all the time, Mr. Sloan, to the exhibit which you filed in the toll case, which is a part of the records of this Commission, and they can be referred to so long as you care to *to* verify— —

A. I think if you want an extended explanation we can analyze the units in the toll case. I haven't got them here.

Q. Well, I am perfectly willing that you should take the time to do it if you want to, but I think it does call for an explanation.

A. Have you found such discrepancies on any item that amounts to anything except a 10 or 15 foot item?

Q. Yes, I think every single one of those items that I called your attention to, and others that I shall, amount to something; some of them are not very large in figures but they indicate something with reference to your system which we would like to call to the attention of the Commission. The next item is 26 pair 22 guage, which you appraised in your Exhibit, Sloan Exhibit A-1, at 32.48 cents, and in the toll exhibit it was 21 cents; what have you to say as to that?

A. Well, just a minute; that is an item of 3000 feet; that is the only item that amounts to anything.

Q. Yes, that is the only item that amounts to anything so far.

A. What did you say the cost was in the toll case?

Q. In the toll case it was 21 cents.

[fol. 3215] A. Well, I can only say that the material alone on that cable is 16.6 cents and you certainly cannot erect it for 10 cents with all the testing that is required for toll cable and splicing.

Q. Now the next one that I want to call your attention to is 51 pair 22 guage, which, in the State-wide appraisal, you have used a unit price of 39.2 cents, and in your toll rate case appraisal your unit price was 25 cents. What is the explanation of that difference?

A. 25 cents?

Q. Yes.

A. The material alone is 23 cents, and those toll figures are too low. That is the answer. You cannot buy the material alone for less than $22.79 per 100 feet.

Q. All right.

A. Approximately 23 cents for the material.

Q. Now the next item is 152 pair of 22 guage cable; that is on page 110. Your price is 67.37 in the State-wide case, and in the toll rate case it was 48 cents.

A. What?

Q. 48 cents.

A. Why the material alone is 48¼ cents; I certainly must have slipped on the toll figures because the figures that you read do not apparently allow anything for labor.

Q. Well, Mr. Sloan, I want you to look at the exhibit that you filed in that case and say whether or not that is your exhibit, and say whether or not that is what you filed and swore to in the toll rate case?

[fol. 3216] A. Yes, sir, it is.

Q. There isn't any question about that, is there?

A. No, sir, I don't deny the child.

Q. All right; I was fearful that you were framing up something on me there.

A. No, I am perfectly open, Mr. McConnaughey.

Q. Now there is an item of composite cable on page 110, 38 pair 16 guage.

A. What item is that?

Q. The last item on the page, 38 pair 16 guage, and 101 pair of 22 guage; your appraisal in this case is $1.05½ cents?

A. Yes, sir.

Q. In the toll rate case it was 79 cents; how do you explain that difference?

A. Well, that is not enough to hardly cover the material.

Q. Now, Mr. Sloan, I call your attention to page 112 of your Exhibit A-1 in this case—I should say page 113, the last item at the bottom of the page, a loading case No. 27A case, 24 No. 561 coils and 48 No. 562 coils, which in this case you appraise at $1755.00, and in the toll rate case you appraised that same loading coil at $2088.00; that is the unit price; that is a reduction of $333.00; what would you say is the reason for that difference?

A. I think there was quite a marked reduction in loading cases of all kinds in that period as I recall.

Q. Well, now, how is your price on loading cases made up, Mr. Sloan?

A. Well, we have a complete list of the Western Electric prices of loading coils back for practically ten years. [fol. 3217] Q. The cost on that is mostly material, isn't it; almost altogether material, isn't it?

A. No, not altogether; there is quite a considerable item of labor on it. It has to be spliced into the cable with two splices; it has to be hauled out and a platform generally has to be erected for it. There is quite an item of labor in it.

Q. Well, just give us the details of your unit on that one that I inquired of.

A. $1755.00 is the cost?

Q. Yes, that is right.

A. Well, the cost of the case is $1324.00. In addition to that there is $56.00 of splicing material and platform material, etc., for erecting the case; making total material of $1380.00; then the addition of 5.7 per cent for supply expense brings the total material to $1458.66, and the labor of erecting, splicing and testing is $231.50, plus supervision, brings the labor to $296.32. Now the addition of material amounting to $1458.66 and labor $296.32 brings $1755.00, the price used.

Q. Now can you tell us what caused the increase—I mean what caused the drop from the toll price in 1923; was the difference in the cases altogether?

A. No, I cannot explain it except in this way, that it is a type of loading coil that is somewhat obsolete and we priced it in the present appraisal on the basis of a modern

loading coil. We have attempted to put a present-day price, or a price of a present-day equivalent, on it, which would be somewhat less than the cost of the older type. There has been a very rapid change in the manufacture of loading coils and some of the older ones have been replaced by a [fol. 3218] more modern type at a somewhat less cost.

Q. Well, now, is there any difference in the labor unit in that case that you know of?

A. How do you mean; between now and the toll case?

Q. Yes.

A. I could not tell you.

Q. Well, now, there is also, on page 114, a loading case which you appraised at $1327.00 in this appraisal, and in your toll case appraisal it was $1440.00; what is your explanation of that difference; 15 No. 581 coils and 30 No. 582 coils?

A. And what was the price in the toll appraisal?

Q. $1440.00, and in this appraisal it is $1327.00.

A. Well, that is apparently a modern type; the material alone, including the supply expense, is $1042.73, and the total labor including supervision is $283.84, giving a total of $1327.00. Now there is apparently a difference of a little over $100.00 there. That may have been due to the change in the price between the two dates—probably was.

Q. And would you say the same of the next item, which is a 27 E case, 24 No. 581 coils and 48 No. 582 coils?

A. Do you mean at the bottom of the page?

Q. I think that is at the bottom of the page, yes.

A. 24 No. 581 and 48 No. 582?

Q. Yes; you appraised that at $1812.00 in this case, and in the toll rate case it was $2160.00, a difference of $348.00.

A. What was it in the toll case?

Q. $2160.00.

A. Well, the present—that is a modern coil; the mate- [fol. 3219] rial is $1503.00 and the labor is $308.80, a total of $1812.00. Now the difference may be a change in price. I cannot tell you without referring back to the details of the former appraisal.

Q. Your labor on that item was $308.80?

A. $308.80, yes.

Q. What does the labor consist of that makes up that sum?

A. Well, the labor—one of the items of labor is the ques-

tion of weight; that particular pot or that case weighs a little over one ton, 2075 pounds. That is one of the factors that varies the cost of installation, and another is the number of coils. You see there are 72 coils in that.

Q. Well, what has to be done with each one of those coils?

A. Well, each coil has to be tested out in splicing it into the current and then the splicing—there are two terminals coming out of the pot, one that goes into either end of the cable into which it is connected. There are two splices to be made. Each coil has to be tested out on each pair of wires that it is connected to; and then there is the erection of a platform and the supporting of about a ton weight there.

Q. How have you worked out those labor costs? Have you a separate item for each one of those processes or have you the whole thing lumped?

A. Well, the erection—the splicing is based on the kind of cable it is spliced into, but the erecting and hauling is based on the five dollars per coil plus fifteen dollars per thousand pounds. You see we attempted to estimate both [fol. 3220] the weight and the number of coils.

Q. Now, so far on loading coils you have accounted, for the difference by the assumption at least that there was a reduction in the price—in the material price of the coils. I call your attention to an item on page 115 of your Exhibit A-1, in which you appraised a loading case No. 26B, one No. 549 coil and two No. 550 coils, at $653.20. That same coil was appraised in the State-wide case at $297.30.

A. Do you mean in the toll case?

Q. In the toll case, I should say.

A. How much?

Q. $297.30.

A. And in this case $653.00?

Q. Yes; what is the reason for that difference?

A. Well, there is evidently something wrong with the toll unit, Mr. McConnaughey, because the cost of that case delivered is $256.00, and it has $36.00 worth of splicing material and $20.00 worth of miscellaneous material, which brings the material cost alone up to $312.00, so that toll unit is evidently too low. It is not enough to cover the material.

Q. Give us a complete analysis of that cost—or did you do that?

A. Well, I will read the items to you. That is a 26B load coil with one No. 549 and two No. 550's. The weight of it is 400 pounds. The cost delivered, $256.00; splicing material, $36.00; miscellaneous material, $20.00; total, $312.00.

Now the addition of 5.7 per cent for supply expense brings it to $329.78; labor, $323.42; gives $653.20.

[fol. 3221] Q. Well, you have appraised that in the toll rate case at $297.30, which is less than the cost of the material as you now find it?

A. Yes, it is less than the cost including the associated material.

Q. And what is your explanation of it, Mr. Sloan?

A. Well, I don't know of any explanation except that we simply apparently put it in on a material base only. The toll price is certainly too low.

Q. Now on page 115 you gave some figures on toll aerial wire which you have appraised by the mile, as I remember it. Now the first item there is bare copper, size .165, which you appraised in this appraisal at $107.63 per mile, and in the toll rate case you appraised that same material at $115.05 per mile.

A. $115.05?

Q. Yes, $115.05; this appraisal being——

A. You aren't slipping—is it marked 165 in the toll case?

Q. How is that?

A. It is very easy to slip on the size there. Are you sure you have the same size?

Q. Well, you get me right; this is the one here (indicating).

A. Well, that is all right.

Q. Your price on that same material is $115.05 in the toll rate case, isn't it?

A. That is right.

Q. What is the explanation of that difference?

A. Well, I cannot give you the explanation without referring to my toll notes. I can give you the details of the present unit.

Q. All right, suppose you do that.

A. The cost of the wire itself, which weighs 435 pounds to the mile, is $72.27; insulators $1.90; tie wires and mis-

[fol. 3222] cellaneous $1.95; total material $76.12; total material including supply expense $80.46; labor $17.30; supervision $3.81; trucking and board and lodging on the toll gang $6.06. That ought to give you $107.63.

Now the only way I can answer your question would be by referring to the toll notes. I don't know. There may have been a little change in the cor er price.

Q. You have testified that the price of copper has gone up, haven't you?

A. No, not specifically on copper.

Q. I thought you did?

A. Perhaps it has; I don't know; I don't know the exact explanation without looking at the details of the toll notes.

Q. Well, now, there is a similar condition exists with reference to all of the items of toll aerial wire; each item has been appraised at somewhat less than it was in the toll rate case, in the present case.

A. I have been more conservative in this case than I was in the toll case.

Q. I don't know whether you were more conservative or not, but you appraised them at a different price.

A. Well, it is very difficult to answer—to give the explanation, without reference to the toll notes; there may have been a slight change in the wage rate; I don't know.

Q. Well, you have professed familiarity with these prices commencing in 1919, and I think we are justified in asking [fol. 3223] you to explain these differences for that reason.

A. Well, I can give you the change in copper price as of the two dates. I have the copper table here, Mr. McConnaughey.

In September, 1923, electrolyptic copper on the New York base was $13.60 per hundred weight.

Q. $13.60 per hundred weight?

A. Yes, sir; and on June 30th, 1925, it was $13.47; that is, it was 13 cents per hundred weight less in June, 1925, than it was in September, 1923, but that would not account for all the difference.

Q. How much difference would that make in a mile of wire of that size?

A. Well, that would be—that is $13.47 and $13.60?

Q. Yes.

A. That is 13 cents per hundred weight. Well, now, that particular size of wire weighs 465 pounds. That would only

account for about between 50 and 60 cents. That would not explain the difference.

Q. Well, now, are you able to give any information as to the price of aerial cable based on that information you now have as to copper prices?

A. Well, I would have to know both the lead and copper.

Q. You were not able to give that this morning. I thought you might have looked it up during the noon hour. So then the cost—the material cost in 1923, as of the time when you made the toll rate investigation, would be——

A. Substantially the same.

Q. Well, it would be about 60 cents higher, wouldn't it; [fol. 3224] that is, that would account for about 60 cents of the difference in your unit price?

A. The June price would be about 60 cents less than in 1923.

Q. And the rest of it would have to be accounted for in some other way?

A. Yes, sir.

Q. And that you are not able now to do?

A. No, I cannot now.

Q. Now there is a similar difference——

A. Well now, there is this explanation; Mr. Cook has just pointed out that in September, 1923, electrolytic copper was $13.60; a month later, in October, it was $12.81. Now that would account for a little greater difference there but still that would not explain it. The explanation is not in the material.

Q. You pursued the same method in working up your unit costs in that case as you did in this case?

A. Yes. Here is a situation; in the present study, the appraisal of this present property, we had a lot more data to derive labor units from. That is, the performance of a considerable amount of additional wire was available, and, in addition to that, I collected the performance—the installation of many thousands of wires in the Eastern States. Now it may be that I have just automatically reduced that labor somewhat—the performance, as compared to 1923.

I think it might be of interest to point out that the labor units on wire that we actually used fell considerably below the actual performance in this test.

Q. All right; let us see that.

A. And that is true, by the way, of all accounts except

[fol. 3225] conduit. The test units which we applied and used gave results considerably below the actual time required. We studied the records in this case of 2762 miles of toll wire and our test units gave a test only of 70 per cent of the actual cost. I think that our appraisal units on wire are too low, as a matter of fact.

Q. Well, now, what units did you use when you found that difference of 70 per cent?

A. I still stuck to my test units. I did not change them.

Q. Well, have you the work sheets here on that item?

A. I think so. Here is our test on that. Here are the various kinds of wire.

Q. What specific estimates did you use in your study of the cost of aerial wire?

A. We used estimates for the year 1922, 1923 and 1924. The specific estimates which I used cover the years 1922 and 1923.

Q. And how many miles of wire were involved in those estimates?

A. 2762.

Q. And what was the total cost of them?

A. The total hours—we did not use cost; it was somewhat over $150,000.00. The actual hours involved in erecting 2762 miles of wire was 63,564 hours.

Q. How many hours were there according to your tentative units?

A. 44,747.

Q. And that is where you get the 70.4 per cent figure that you spoke of awhile ago?

A. That is correct.

Q. That is, your tentative units of performance were [fol. 3226] 70.4 per cent less than the estimate reports showed the Company had done?

A. Not 70 per cent less; they were 70 per cent of them.

— Notwithstanding that difference, you stuck to your estimates and priced it out on that basis?

A. Yes, sir, that is correct. I think that that may explain why we are lower now than we were in 1923. Perhaps I gave more weight to their actual performance than I did in this case.

Q. Well, now, you can look that up and report whether or not that was the case, can't you?

A. Yes.

Q. Now the same thing is true, that is, there is the same difference between the—not the same amount of difference, but a comparable difference between the prices of bare iron wire, the prices in this present appraisal being $43.15——

A. Let me put that down; what size is that?

Q. That is .48 of bare iron?

A. And in this appraisal is what?

Q. Is $43.15, and in the toll rate appraisal is $52.01.

A. Well, I presume the same explanation would answer.

Q. And bare iron wire .134, the present appraisal $39.40 against the toll rate case appraisal of $47.55; and bare iron .109, the present appraisal is $30.35 and the toll rate appraisal was $38.29.

A. It strikes me offhand that in the toll case I gave more consideration to the actual performance of the Company than I did in this case. I feel that I am cutting them [fol. 3227] pretty severely when I knock 30 per cent off of their actual performance in putting up wire.

Q. Well, I would say you were.

A. I think the wire account should be raised.

Q. Now on that same page there is some insulated copper wire, size .104?

A. .104 insulated copper?

Q. Yes; which in this appraisal is appraised at $135.38 per mile, and in the toll rate appraisal was $140.02 per mile?

A. Well, that difference could easily be explained by a difference in material cost.

Q. Would there be that much difference in——

A. Well, there might be, yes; that is only $5.00 per mile, which is about one-tenth of a cent a foot. Insulated copper fluctuates more than that from month to month.

Q. Well, do you know as a matter of fact that there was that difference in that period?

A. No, I can't say definitely that that was it.

Q. But you think probably that is it?

A. I imagine so from the looks of those two units.

Q. Well, then how do you account for the next item, the .08 size, which in the present appraisal is $111.49 and in the toll appraisal it was $84.40, a difference of $27.00—page 115?

A. No, I cannot explain that difference. That figure is undoubtedly too low in the toll case. The material alone is $45.38.

Q. Well, will you look that up and give us the explanation of it?

A. Yes.

Q. And while you are doing that, the next item, .064, you [fol. 3228] appraise now at $99.25, and you appraised then at $78.24.

A. Yes; I would have to look up that difference in order to answer those questions.

Q. Now on insulated wire—insulated iron wire, I should say——

A. What is the .064?

Q. That is insulated copper. Now on insulated iron——

A. Just a minute; I want to look that up—Well, that toll rate price was too low; the material is $33.14.

Q. But you work it out on the same system in each case?

A. Well, except that I had the additional two years to gather information regarding it.

Q. And the twisted pair No. 14 guage, $169.00 in 1925 and $172.86 in 1923?

A. What one is that?

Q. That was the twisted pair No. 14 guage?

A. $169.84?

Q. Yes; $3.98 less in the State-wide appraisal than in the toll case?

A. That was No. 14 copper twisted pair?

Q. Yes.

A. $169.84, and what was the toll price?

Q. $172.86.

A. Well, that could easily be explained by the fluctuation of ten per cent in the price of material.

Q. If there was such a fluctuation it would affect 18 guage cable also—I mean 18 guage wire twisted pair?

A. I would think so, offhand, yes, sir.

Q. The next item you appraised at $129.10 in this present appraisal——

A. Give me the size.

[fol. 3229] Q. No. 18 guage.

A. Copper twist?

Q. Yes; it doesn't say copper twist but I assume that it was.

A. What is the unit, $129.10?

Q. $129.10, yes.

A. And what was the toll?

Q. And in the toll case it was $123.53, an increase there of $5.87?

A. That is $6.00 on a mile—that is about 10 per cent.

Q. I know, but you just accounted for a difference the other way in that same way.

A. Well, of course there are two—you see, the extension on an 18 is much more of a factor than it is on a 14. I can conceive of those things going in opposite directions.

Q. That is possible, is it?

A. I think it is, yes.

Q. All right; you will check that and let us know?

A. Yes. Those are minor differences on those two sizes.

Q. Now on page 116 you appraised toll underground conduit, single tile one duct, in the State-wide appraisal is appraised at $1.68.

A. Just a minute; one duct in the State-wide is how much?

Q. $1.68, and in the toll case it is $2.65, a difference of 97 cents; how do you account for that?

A. Well, I will have to refer to my other units.

Q. How did you get your prices on conduit?

A. In the same way here, by studying the results of conduit construction—specific estimates.

Q. Can you tell us whether you made any change in your [fol. 3230] unit prices that you applied tentatively or in that performance figure?

A. No; in duct we made no change. That is, we brought our unit prices up to the actual performance of the Company. I believe I explained the reason for that in the other hearing. The records of construction which we found covered outlying districts; there wasn't very much construction in the heavy traffic areas of the larger cities; so that the records in the outlying districts would not give—I thought an extra allowance should be made for that extra heavy construction; so that in the case of conduits we brought our units up to the actual performance.

Q. Now in connection with that matter, when you were giving your testimony in chief you were to furnish us with the factor that you used in increasing the amount of the cost as you determined it from the study of the Company's records in order to get the situation as it was shown in the congested parts of the cities; did you do that?

A. I don't know. If you haven't got it, perhaps I did not.

Q. I thought perhaps you might have furnished it to Mr. Hagenah.

The Witness: Did I furnish you with that, Mr. Hagenah?

Mr. Hagenah: You did not.

The Witness: I think I have a note here. Our tentative test units fell 22.77 per cent below the actual performance so we raised them up; we increased our test units by a percentage which made up the difference between the re-
[fol. 3231] sult given by the test units and the actual performance, which meant 22.77 per cent.

Q. Well, now, on page 1497 of the record you testified: "So that I made a special study of the conditions for the downtown areas in Cleveland and added an additional factor on my unit costs for that type of construction; and then I made a third study to determine the sort of a medium area that is not the most congested area of the city but lies between the residential area and the heavy traffic area of large cities and considered three factors of that type in finally arriving at the units costs which I finally employed."

Then I asked you: "What was the factor that you used? What did you add to that?"

And you answered: "Well, I don't know what it will be in percentage. I took 20 per cent as I recall it of this heavy type construction in downtown areas that would not be represented by present day construction methods, and what were those percentages? (Consulting assistant.) I took 20 per cent. in heavily congested traffic areas and then 20 per cent in business area under normal city traffic conditions and the residential and suburban areas I took at 50 per cent., so I weighted my units in those proportions."

Now a question by me: "What did you add for that extra heavy construction?"

The Witness: Do you mean to the residential unit which [fol. 3232] was the starting point?

Q. Yes, this figure you have used to get 22 per cent?

A. The 22.77 per cent represents the ratio of the result obtained by the use of our tentative units below the actual result as is experienced from the construction record.

Q. Now did you use that figure, the figure you obtained in that way?

A. Yes. Apparently we chopped off the .77 and just

used 22 per cent. That is apparently what we did. I have a note here "Used 22 per cent."

Q. And what was your labor cost on those items, on those conduit items?

A. Well, conduit is a kind of a complex unit. It is made up of a lot of items of excavation and back filling and removal, etc.

Q. Well, what was your labor wage per hour scale that you used?

A. I think it was 50 cents. As I recall we used 50 or 55 cents per hour.

Q. For laying conduit?

A. No, not for laying duct. That would be a mason's rate for laying duct, but for digging and hauling; in the laying of the duct they generally employ a mason.

Q. Well, that cost would be included in the cost of the duct, wouldn't it?

A. Well, I say we split it up in various steps; we have a labor unit for digging and another labor unit for refilling and hauling, etc., and another labor unit for laying duct, and apparently, we have not the details of the wage rate used on the duct but it is my impression that it was either 50 or 55 cents.

[fol. 3233] Q. Now you testified that you made some adjustment because of this extra heavy construction in the heavy traffic portions of the City of Cleveland, or in the cities, at least, and you promised to give us the adjusting figure. Let me read on further in your statement:

"What did you add for that extra heavy construction?" And you answered: "Well, I don't—I can give you the units for each type. That would be the best way, I guess. I didn't do it in percentage. I took so many, a certain part of one unit, and 20 per cent. of one unit, 30 per cent of another and 50 per cent. of a third."

A. Then didn't I give you the details for a typical six duct run giving the three units? It seems to me I read that right into the record.

Q. I don't believe you did.

A. I thought I read the details on a six duct run into the record.

Q. Mr. Postle and I have both been over the record at least once, once in the last two or three days, and we do not recall it and cannot find it.

A. Well, I will give you that. I suppose one or two sizes will be enough?

Q. Yes; what I want is for you to explain how you used these three sets of units; I understand that is what you did; how you divided them up and where you placed one or the other. I think I may say that it is not apparent in the examination of the appraisal. At least it is not apparent to me, how you used the three different sets of units.

A. I think maybe I can give it to you right here. If you [fol. 3234] will look at the report and pick out some size——

Q. Well, let us get——

A. Does it make any difference what size for the purpose of the illustration?

Q. You might take one of the larger amounts; say six duct or four duct, somewhere around there; well, here is a four duct.

A. Well, I spoke of the——

Q. Here is a six duct multiple tile.

A. What is the price?

Q. The price is $3.40.

A. Is that listed under multiple tile?

Q. Yes.

A. I will have to give you the explanation of that. The full details are not here. Apparently we have a factor of 16 per cent rather than 22 per cent here and I cannot tell from the looks of this which one we have used, but it is——

Q. Well, the thing that I particularly want an explanation of was the meaning of your statement there that you had used three different units, as I gathered it; did you do that?

A. Yes, we did. Now maybe I can get it yet.

Q. Let me suggest, Mr. Sloan, that if you can explain it by referring to the exchange underground conduit where you have more items to consider——

A. Well, that is what is apparently confusing the thing here. Is that difference between exchange and toll? I can give it to you if you refer to exchange; that does simplify the thing a good deal.

Take any item there, $3.33 for instance; the heavy construction unit was $4.08 per duct foot; the medium con- [fol. 3235] struction unit was $2.82, and the residential unit was $2.14.

Now if you take 20 per cent of the first unit, 30 per cent

of the second unit and 50 per cent of the last unit you ought to get $3.33; that is right—that should give you $2.73. Just try that and see if it does not work out that way. That gives $2.73. Now if you increase that by 22 per cent, that should give $3.33.

Mr. Postle: May I inquire, Mr. Sloan, what was the first figure; was that $4.08 per foot for the heavy construction?

The Witness: $4.08; that is for very heavy construction, yes.

By Mr. McConnaughey:

Q. And you estimated that 20 per cent of the underground conduit was of that character?

A. That is right.

Q. And that 30 per cent was of the medium heavy which you appraised at $2.82, and 50 per cent——

A. And 50 per cent was in the residence district, which was not so difficult, at $2.14. We weighted our test units in those proportions.

Q. And that gave you the figure of $2.73?

A. Yes, sir.

Q. And to that you added the 22 per cent to bring it up to the actual performance?

A. Yes, sir.

Chairman Marshall: We will adjourn at this time until ten o'clock tomorrow morning.

The Witness: I am sorry I had to stumble around over [fol. 3236] that explanation. It has been so long since I worked with these books that I am a little rusty on them.

Q. Well, we perhaps should have called your attention to them sooner.

Commissioner Poor: Your last question meant 23 instead of 22, didn't it?

By Mr. McConnaughey:

Q. Your percentage was 22, wasn't it?

A. Yes, sir.

Commissioner Poor: I thought it was 23 this morning?

The Witness: No, it was 22.

And thereupon the further hearing of this matter was adjourned until Wednesday, December 8th, 1926, at 10:00 o'clock A. M.

[fol. 3237] Morning Session

Wednesday, December 8th, 1926.

And also W. F. SLOAN, resuming the stand for further cross-examination, continued his testimony as follows:

Cross-examined.

By Mr. McConnaughey:

Q. Mr. Sloan, have you used the same unit prices for toll underground conduit as for exchange underground conduit of the same size?

A. No, I think not. In referring to the notes—well, let us take a specific instance first and see what you have in mind. Take this one, I think that referred to——

Q. Six duct?

A. Six duct is $3.40 per duct foot as shown on page 116—or per trench foot, and the exchange unit——

Q. On page 61?

A. Well, you want to be sure and get whether it is multiple tile or single tile.

Q. Yes, that is right.

A. The multiple tile duct that corresponds to that is shown on page 66 I think; $2.93. I think those two units are comparable. The reason for that difference is that we took toll estimates of actual toll construction and applied the exchange units to them and found that the toll construction had actually cost about 16 per cent more.

Q. Why would it cost 16 per cent more; what were the [fol. 3238] differences?

A. Well, perhaps the conditions under which the toll was built—further from the cities, or there might be a number of explanations for it. As a matter of fact it did cost about 16 per cent more.

Q. You mean it did cost that according to the specifications or the specific estimates that you examined?

A. Yes, sir.

Q. Let us see those estimates, will you?

A. I don't seem to find the list of estimates themselves, Mr. McConnaughey, but I find the calculation here where we derived a factor of 16 per cent based on about 3000 feet of toll construction.

Q. Was it 3000 feet in one job or several jobs?

A. Several jobs.

Q. What was the size of each job?

A. Well, it is about 15,000 feet. There were 2778 feet in this group of one duct, and the other sizes here totalling about 13,000 feet, where the actual cost was—the actual cost of that amount of duct was $31546.00, which is substantially two-thirds of the total toll duct. The total appraisal on toll duct is about $49,485.00; so we have taken approximately about—over 65 per cent, and we applied the exchange units that we had already derived against the quantities in this toll duct and arrived at a factor of 16 per cent to make the units that we derived for exchange duct equal the cost for the toll duct.

Q. Are you able from what data you have to indicate more definitely what the difference was; have you analyzed [fol. 3239] those costs?

A. No, I have not, except the actual cost as shown here. I cannot even give you the estimate numbers on that, but I can look through our other data and get them.

Q. What was the exchange unit that you applied there?

A. Well, the same one as shown on page—the one we referred to yesterday, $2.93; that is for the six.

Q. $2.93 or $3.33?

A. Well, this is multiple; $3.33 applies to single toll, doesn't it?

Q. Oh, yes, that is right; I beg your pardon.

A. I think the $2.93 is multiple and as I recall the toll duct is multiple duct.

Q. Yes, that is right.

A. At least a part of it is multiple tile.

Q. Now going back again to this six duct multiple tile——

A. Exchange or toll?

Q. Toll; of which the unit price is $3.40; your unit price on that in the toll rate case was $3.33?

A. About seven cents less.

Q. Yes, about seven cents less. Now is that difference explained by the effect of comparisons with actual work, do you think, or what is the reason?

A. Well, it might be. I think, Mr. McConnaughey, that any consideration of this whole comparison with the toll case—that work was done three years ago. I have done a vast volume of work in the intervening time and I haven't the notes of the toll report with me. A unit cost, as you know, is made up or labor and material and supply expense [fol. 3240] and supervision and trucking and cartage and board and lodging and many items of that kind. Now it is very difficult for me to give you an explanation of those differences from memory. I have no doubt that most of the items that you have been discussing can be very easily explained but unfortunately I have not got my toll data with me and I am very sorry that I have not, because I did not expect to be—hadn't thought of this comparison being made, so I cannot attempt from memory to try to explain differences in two reports that are three years apart. There have been changes in labor rates and there have been changes in material prices. Some have been up and some have been down and a dozen things that might affect the cost.

Q. Tell me what changes have been made in labor prices between 1923 and 1925?

A. Well, I wont attempt to give you any definite figures between the two dates without referring to my notes, because it is purely a matter of memory and I have had so many other kinds of work in the mean time that I do not try to carry those things in my head.

Q. Well, now, on this same page, 116, in your toll case appraisal, you price manholes at $243.00 each; that is increased in the State-wide case to $286.00; can you explain that?

A. Why, no. The statement that I made applies to all the items, Mr. McConnaughey. There is no use repeating it for each individual unit.

Q. Now, reverting to, or passing, rather, to another matter, I call your attention to an item on page 116 of your [fol. 3241] Exhibit, "Multiple Tile four duct", which you have appraised at $2.66; have you that?

A. Yes, sir.

Q. Now just below is an item "four duct", in which the ownership is divided between The Ohio Bell Telephone Company and The A. T. & T. Company, The Ohio Bell Telephone Company having 25 per cent and the A. T. & T.

Company 50 per cent; you have indicated a unit price of $2.66, which is the same as that above. How have you in this inventory indicated the unit prices on these items that are jointly owned with some other company?

A. Well, I indicate the price the same way; that is the full price. I have either taken the quantity and 50 per cent of the quantity, and unless I have made an error, I assume—let's see—apparently—are you referring to the item of 3112 feet?

Q. Yes, that is it?

A. Well, if you extend that price of 3112 feet by the unit of $2.66 you will get an item of over $7000.00. You see, what we have set out is about one-fourth of that, or about $2000.00.

Q. You have made that adjustment in the extension, have you?

A. Well, I intended to unless we have slipped on the thing.

Q. Well, I think you have. I am asking you to find out what your method was. Is that the method pursued all the way through?

A. Well, it is the method we intended to pursue, yes, sir. The item above that does not seem to check that way, however.

Q. Well, the item above is straight—isn't jointly owned?

[fol. 3242] A. No—oh, I see.

Q. That is straight Ohio Bell property?

A. That is right.

Q. Now, Mr. Sloan, since you have professed your inability to explain these differences——

A. Well, don't misunderstand me, Mr. McConnaughey. I have not confessed any inability to explain.

Q. Well, don't interrupt me. At this time—is that fair?

A. Well, your statement was not fair. I resent the statement that I am unable to explain. I can explain it when my notes are here.

Q. Well, that is just where you interrupted me. Let me repeat that sentence. Having admitted your inability to explain these discrepancies at this time because you have not your notes with you——

A. That is a fair statement.

Q. That is what I intended to say. I call your attention to a number of other similar differences and ask you to

explain them along with these others when you have had access to your notes.

A. I will make a careful analysis of my toll report and if you wish to cross-examine at any future time I will have my notes with me and try to answer your questions to the best of my ability.

Q. All right. Now let me furnish you on the record with a list of the items to which I want to call your attention——

A. Well, if you wish to do it in this way; I intended to go over the whole toll report, item by item, and for any [fol. 3243] item that you want to discuss I will try to take it up, although if you wish to point out specific ones I will take those.

Q. I think we prefer to point out on the record these specific ones, and Mr. Postle will read them into the record.

Mr. Postle: At page 116 of your Exhibit in the State-wide case, the unit for creosoted wood one duct is $1.32, and the unit for the same item in the toll case is $1.51; it is page 20 in the Exhibit in the toll rate case.

For iron pipe one duct the unit in the State-wide case is $2.11, and the unit in the toll rate case is $1.93; the page in the exhibit in the State-wide case being 116, and that in the toll rate case page 20.

The unit for sewer tile one duct in the State-wide case is $1.74, and the unit for the same item in the toll rate case is $2.13, the pages in the exhibits being the same.

The unit for sewer tile two duct in the State-wide case is $2.22, and that in the toll rate case $2.31.

Three tile duct for the same item in the State-wide case is $2.89, and in the toll rate case $2.53.

The unit for manholes in the State-wide case is $286.00, and that in the toll rate case $243.00.

Coming now to Account No. 255, toll underground cable, 14 pair 13 guage, the unit in the State-wide case is $0.6166, and in the toll rate case $0.535.

37 pair 13 guage in the same account, in the State-wide [fol. 3244] case $1.0132, and in the toll rate case the unit is $1.013.

Take the item of 7 quad 13 guage, in the State-wide case the unit is $0.686, and the unit in the toll rate case is $0.555.

In the same account, No. 255, the item is 12 quad 13 guage, and the unit cost in the State-wide case is $0.910 and the unit cost in the toll rate case is $0.769.

For the item of 19 quad 13 guage, in the State-wide case the unit is $1.170, and in the toll rate case $1.105.

Mr. Burr: We have it $1.015.

Mr. Postle: We have it $1.105.

Mr. McConnaughey: It should be $1.015.

Mr. Postle: We stand corrected. Being $1.015.

The next item in the same account is 27 quad 13 guage, the unit in the State-wide case is $1.430, and in the toll rate case $1.339.

The next item is one pair 14 guage, the unit in the State-wide case is $0.44, and in the toll rate case $0.15.

In the same account the next item is 5 quad 14 guage, and the unit is $0.533 in the State-wide case, and in the toll rate case $0.404.

The next item is 6 quad 14 guage, the unit in the State-wide case is $0.575, and in the toll case $0.431.

The next item is 8 quad 14 guage, the unit in the State-wide case is $0.655 and in the toll rate case $0.478.

[fol. 3245] The next item is 12 quad 14 guage, the unit in the State-wide case is $0.795, and in the toll rate case $0.577.

The next item is 13 quad 14 guage, the unit in the State-wide case is $0.83, and in the toll rate case $0.673.

The next item is 19 quad 14 guage, the unit in the State-wide case is $1.020, and in the toll rate case $0.891.

The next item is 27 quad 14 guage, the unit in the State-wide case is $1.255 and in the toll rate case $1.126.

The next item is 16 pair 16 guage, the unit in the State-wide case is $0.5072, and in the toll rate case it is $0.426.

The next item is 21 pair 16 guage, the unit in the State-wide case is $0.5599, and in the toll rate case the unit is $0.461.

The next item is 26 pair 16 guage, the unit in the State-wide case is $0.6122, and in the toll rate case is $0.477.

The next item is 51 pair 16 guage, the unit in the State-wide case is $0.8426, and in the toll rate case it is $0.769.

The next item is 101 pair 16 guage; the unit in the State-wide case is $1.2958, and in the toll rate case is $1.24.

[fol. 3246] The Witness: You missed one there, Mr. Postle.

Mr. Postle: I did not intend to; where is that?

Mr. McConnaughey: No, we have not missed any; we are using our own deduction.

The Witness: I thought you were taking them all.

Mr. McConnaughey: No, we are not taking them all.

Mr. Postle: The next item is 5 quad 16 guage, the unit in the State-wide case being $0.45, and in the toll rate case $0.291.

The next item is 7 quad 16 guage, the unit in the State-wide case being $0.51, and in the toll rate case $0.35.

The next item is 8 quad 16 guage, the unit in the State-wide case being $0.535, and in the toll rate case $0.432.

The next item is 10 quad 16 guage, the unit in the State-wide case being $0.585, and in the toll rate case being $0.451.

The next item is 12 quad 16 guage, the unit in the State-wide case being $0.64, and in the toll rate case $0.472.

The next item is 15 quad 16 guage, the unit in the State-wide case being $0.71, and in the toll rate case $0.52.

The next item is 19 quad 16 guage, the unit in the State-wide case being $0.795, and in the toll rate case $0.577.

The next item is 24 quad 16 guage, the unit in the State-[fol. 3247] wide case being $0.091, and in the toll rate case $0.751.

The next item is 27 quad 16 guage, the unit in the State-wide case being $0.965, and in the toll rate case $0.772.

The next item is 37 quad 16 guage, the unit in the State-wide case being $1.155, and in the toll rate case $1.013.

The next item is 52 quad 16 guage, the unit in the State-wide case being $1.40, and in the toll rate case $1.26.

The next item is 76 quad 16 guage, the unit in the State-wide case being $1.80, and in the toll rate case $1.10.

The next item is 2 pair 19 guage, the unit in the State-wide case being $0.2447, and in the toll rate case the unit is $0.15.

The next item is 11 pair 19 guage, in the State-wide case the unit is $0.2997, and in the toll rate case it is $0.18.

The next item is 16 pair 19 guage, the unit in the State-wide case is $0.3324, and in the toll rate case it is $0.25.

The next item is 21 pair 19 guage, the unit in the State-wide case is $0.3550, and in the toll rate case it is $0.29.

The next item is 26 pair 19 guage, and in the State-wide case the unit is $0.3911, and in the toll rate case it is [fol. 3248] $0.34.

The next item is 31 pair 19 guage, the State-wide unit is $0.4167, and in the toll rate case the unit is $0.43.

The next item is 41 pair 19 guage, the unit in the State-wide case being $0.4782, and in the toll rate case the unit is $0.46.

The next item is 51 pair 19 guage, the State-wide unit being 0.524, and in the toll rate case the unit is $0.478.

The next item is 76 pair 19 guage, the State-wide unit is $0.651, and in the toll rate case the unit is $0.577.

The next item is 101 pair 19 guage, the unit in the State-wide case being $0.7825, and in the toll rate case the unit is $0.769.

The next item is 152 pair 19 guage, the unit in the State-wide case is $1.0359, and in the toll rate case the unit is $1.013.

The next item is 12 quad 19 guage, the State-wide unit is $0.48, and the toll rate the unit is $0.33.

The next item is 19 quad 19 guage, the State-wide unit is $0.575, and the toll rate unit is $0.45.

The next item is 27 quad 19 guage, the State-wide unit being $0.68, and the toll rate unit is $0.492.

The next item is 37 quad 19 guage, the State-wide unit is $0.79, and the toll rate unit is $0.576.

The next item is 52 quad 19 guage, the State-wide unit is $0.95 and the toll rate unit is $0.771.

[fol. 3249] The next item is 154 quad——

The Witness: Are you skipping that 75?

Mr. Postle: Yes. Of which the exhibit shows that 42.86 per cent is Ohio Bell Telephone Company property; the State-wide unit is $1.81, and the toll rate unit is $1.65.

Mr. Burr: On what page is the toll unit?

Mr. Postle: The toll rate page is 25, and the State-wide case page is 118.

The next item is 21 pair 20 guage, the State-wide unit is $0.3484, and the toll rate unit is $0.33.

The next item is 26 pair 22 guage, the State-wide unit is $0.3136, and the toll rate unit is $0.19.

The next item is 76 pair 22 guage——

The Witness: Are you skipping 50?

Mr. Postle: Yes. Those that I do not read are skipped.

The Witness: You have skipped six so far.

Mr. Postle: The State-wide unit is $0.4696, and the toll rate unit is $0.45.

The next item is 152 pair 22 guage, the State-wide unit is $0.6878, and the toll rate unit is $0.577.

The next item appears on page 27 of the toll rate exhibit and is as follows: No. 19 B & S guage cable, 16 quad 19 guage, 268 pair 19 guage; the toll proportion, according to the exhibit, being 10.67 per cent; the State-wide unit is $1.785, and the toll rate unit is $1.63.

The next item is found on page 22 on the toll rate ex-
[fol. 3250] hibit and is 12 quad 13 guage and 9 pair 16 guage, the unit in the State-wide case being $0.99, and in the toll rate case $0.796.

The next item appears on the same page of the toll rate exhibit and is 7 quad 13 guage, 17 quad 16 guage, the State-wide unit is $1.04, and the toll rate unit is $0.891.

On the same page of the toll rate exhibit appears the next item, which is 7 quad 13 guage, 20 quad 16 guage, the State-wide unit being $1.10, and the toll rate unit $0.952.

The next item is 3 quad 10 guage, A. T. & T. 12 quad 13 guage, found on page 25 of the toll rate exhibit.

The Witness: Is that the item of 83 feet?

Mr. Postle: Yes, sir.

The Witness: Well, that designates it enough.

Mr. Postle: At page 25 of the toll rate exhibit, the unit in the State-wide case is $1.135, and in the toll rate case $0.992.

The next item is found on the same page of the toll rate exhibit and is 3 quad 10 guage, 12 quad 13 guage——

The Witness: Is that the item of 57 feet?

Mr. Postle: Yes.

The Witness: That is sufficient.

Mr. Postle: And the unit in the State-wide case is $1.135, and in the toll rate case is $0.992.

The next item is 24 quad 16 guage——

The Witness: Wait a minute; are you skipping that 12 quad of 14, and 26 quad of 16?

[fol. 3251] Mr. Postle: Yes.

The Witness: The next one is that long description there of 4774 feet?

Mr. Postle: Yes.

The Witness: Is that the one you mean; 3 quads of 10 and 12 quads of 13, etc.?

Mr. Postle: I find, Mr. Sloan, that we have that.

The Witness: That is the one you mean, is it?

Mr. Postle: That is the one to which I refer.

The Witness: 4774 feet?

Mr. Postle: Yes, that is correct. The unit for this item in the State-wide case being $1.555, and in the toll rate case $1.41.

On page 28 of the toll rate exhibit there is found an item of 7 quad 13 guage, 429 pair 22 guage, the unit in the State-wide case being $1.675, and in the toll rate case $1.54.

The Witness: What is the length?

Mr. Postle: 11,858 feet.

The next item appears on the same page of the same exhibit and is 303 pair——

The Witness: Are you skipping several now?

Mr. Postle: I will start it again, Mr. Sloan. The item is 7 quad 13 guage, 17 quad 16 guage, 303 pair 22 guage.

The Witness: Toll 45.16 per cent?

Mr. Postle: Yes; and the unit in the State-wide case is [fol. 3252] $1.695, and in the toll rate case $1.57.

The next item is 14 quad 16 guage and 220 pair 19 guage, the unit in the State-wide case being $1.695, and in the toll rate case $1.57.

The next item is 30 pair 16 guage and 220 pair 19 guage, the unit in the State-wide case being $1.710, and in the toll rate case $1.60.

The next item appears on page 25 of the toll rate exhibit, and is given as 12 quad 16 guage, 46 quad 19 guage, 2 pair 22 guage, and the unit in the State-wide case for this item being $1.12, and in the toll rate case $0.981.

The next item is found on the same page of the same exhibit and is given as 8 quad 13 guage, 48 quad 16 guage, 26 pair 19 guage, the unit in the State-wide case being $1.72 and in the toll rate case $1.60.

The next item is found at page 26 of the same exhibit and is given as 3 quad 10 guage, 12 quad 13 guage, 278 pair 22 guage, the unit in the State-wide case being $1.72, and in the toll rate case $1.61.

The next item is 3 quad 10 guage, 12 quad 13 guage, 278 pair 22 guage, the unit cost in the State-wide case being $1.72, and in the toll rate case $1.61.

At page 28 of the same exhibit, the item is 37 pair 16 guage, 227 pair 19 guage, the unit in the State-wide case being $1.79, and in the toll rate case $1.63.

The next item is 13 quad 10 guage, 227 pair 19 guage, the

unit in the State-wide case being $1.80, and in the toll rate case $1.64.

[fol. 3253] Commissioner Poor: The Commission is wondering why it is necessary to call all these matters and take up the time to read them into the record now. This witness has stated that he cannot make any explanation of these variances at this time because he has not his data in the toll rate case; that he will bring that data and be ready to make the explanation on any items that are requested of him and all these matters will then have to be gone all over again.

Mr. McConnaughey: I understood he would undertake to furnish an explanation, which need not necessarily mean his personal appearance, on these items, and I was adding to the number of items that I wanted him to explain. If he is to come back again your suggestion is perfectly all right, but to save time we can hand him a list, as far as that is concerned.

Commissioner Poor: I think that at least would be satisfactory and would meet the purposes, wouldn't it?

Mr. McConnaughey: I think so. Well, let us do that.

The Witness: Or any other alternative. There are only a few items that have been omitted here; there are about seven so far. We can just indicate the items that have been omitted from this list. There are only seven so far.

By Mr. McConnaughey:

Q. Do you mean in the toll cable?

A. You have practically taken every item but seven.

[fol. 3254] Q. In the toll cable list do you mean?

A. Yes; if there are any other ones you wish omitted I will just make a check mark after them.

Q. I think the only ones that are omitted are the ones that were in the State-wide case that were not in the toll case.

A. Why not put it just those that are in the toll case then?

Commissioner Poor: If you intend to embrace all those items in the toll case you can simplify——

Mr. McConnaughey: I simply have a list of all that I wanted to call his attention to and I have related it to the whole body; but I can put it that way.

By Mr. McConnaughey:

Q. Let us call your attention to the fact, Mr. Sloan, that every item appearing in the toll underground cable appraisement as of September 30th, 1923, that is also appraised in your inventory and appraisal in the State-wide case is different as to its unit cost, and I ask you to explain the difference.

A. Well, that is a much simpler way to put it. We will simply take it on the basis of any item that appears in both reports where there is a difference, you wish that difference explained?

Q. That is it?

A. Well, that is a simpler way to do it.

Commissioner Poor: You are asking him to explain that in a set-up or statement to you, or do you want him to prepare himself so that he can explain it on being called back again?

[fol. 3255] Mr. McConnaughey: I would rather cross-examine him with reference to it but it is not possible at this time and we are contemplating closing our cross-examination. Now if it can be kept open and he can come back at a future time that would be the better way to do it, no doubt.

The Witness: That is satisfactory to me.

Mr. McConnaughey: All right.

By Mr. McConnaughey:

Q. Now, Mr. Sloan, we had a little discussion yesterday about an item in the inventory, the 130 foot steel tower. I want to ask you where that is located. There is only one item of that kind in the system?

A. I don't know.

Q. Do you think Mr. Cook could tell you where it is?

A. I don't think so, no. It is a river crossing tower and I don't think—possibly I saw it, but I cannot recall where it is located.

Q. Mr. Sloan, I call your attention to a document that is entitled "Appraisal of the exchange property of The Cincinnati & Suburban Bell Telephone Company as of September 30th, 1925," bearing your name, which was filed by you as a report to the company and as an appraisal of their

property in a rate case pending before this Commission; I will ask you to state if that is a copy of that exhibit?

A. Yes, this is a copy of the report I made.

Q. The copy that I show you bears the—I thought there was a file mark on it—but it was filed before the Commission in the Cincinnati case?

A. In the Cincinnati case, yes.

[fol. 3256] Q. When was that appraisal made, Mr. Sloan?

Mr. Burr: I object.

Mr. McConnaughey: Why?

Mr. Burr: Any appraisal made of property other than the property of The Ohio Bell Telephone Company has nothing to do with this case. An appraisal made in some other case, which is neither a part of this case by consolidation or in any other way, can certainly have no bearing on the fair value of the property of The Ohio Bell Telephone Company in this case.

I have not seen the exhibit, but I understand it purports to be an appraisal of the property of The Cincinnati & Suburban Bell Telephone Company in Cincinnati and its vicinity. Of course that does not reflect on the value of the property of The Ohio Bell Telephone Company.

Mr. McConnaughey: That is quite true, it does not reflect on the value, but it does I think reflect on the method of appraisal and the results accomplished, as we shall show by a comparison of some of the appraisals of exactly similar items in the two inventories.

Here are two companies operating side by side in the same State, under the supervision of this Commission; the same classification of accounts; the same A. T. & T. Company methods of doing business throughout and recording results of their operations, by the same man, with results as to unit prices varying all the way from 10 to 100 per cent.

Now we want to show the Commission that variance and [fol. 3257] ask Mr. Sloan to explain why.

Mr. Burr: The two companies, if you will excuse me, are not operating side by side in any sense. The Cincinnati & Suburban Bell Telephone Company, as this Commission knows, is operating in a small, densely populated area in the southwestern corner of the State of Ohio.

The Ohio Bell Telephone Company, on the other hand,

is operating in wide spread territory, including practically all the balance of the State of Ohio.

There is no evidence here that conditions surrounding the construction of telephone property are the same in Cincinnati as they are in the State generally speaking. There is nothing to show that the property of The Cincinnati & Suburban Bell Telephone Company, as against that of the property of The Ohio Bell Telephone Company, reflects like or even similar conditions. And certainly the evidence of what may be the fair value of the property of The Cincinnati & Suburban Bell Telephone Company is not competent evidence here, nor are comparisons competent where the conditions are not shown to have been the same.

That, I believe, has been the ruling of this Commission over and over again.

If a comparison with The Cincinnati & Suburban Bell Telephone Company's property is competent in this case, then it might be equally competent to compare telephone property constructed in Michigan or in Kansas or some other distant state.

Commissioner Poor: Is not this objection and the argu- [fol. 3258] ment a little premature? They have not attempted to put in this appraisal; he only asks him if he made the appraisal, and I think that that would be competent on cross-examination, if for nothing more than the qualification of this witness, as to his qualifications.

Mr. Burr: It all has to do with interrogating the witness as to an appraisal made by him of another property in another locality than that of The Ohio Bell Telephone Company. I want my objection to appear at the very outset of the interrogatories on this subject.

Commissioner Poor: Will you read the question, please?

(Question read.)

Commissioner Poor: The objection will be overruled.

Mr. Burr: Note my exception.

(Question read.)

A. Let me see the appraisal, please. It bears the date of September 30th, 1925; it was made in the months preceding that—or following that. I think we were there about four or five months.

Q. You made the appraisal as of September 30th, 1925?

Mr. Burr: Note my same objection.
Commissioner Poor: Objection overruled.
Mr. Burr: Note an exception.

A. Yes, sir.

Q. And when did you testify before the Commission with [fol. 3259] reference to the appraisal?

Mr. Burr: May the record show the same objection; that the objection is overruled and my exception noted to each one of the questions propounded by Mr. McConnaughey on this line until I indicate the contrary?

Commissioner Poor: The record may so show.

The Witness: I do not recall the date of the testimony. That was started in September and we finished it in January or February; we finished that I think the latter part of January of this year, or early in February, and then the hearing was held some time after that, early this year; I don't recall the exact date.

Q. Well, whatever the time, you testify the prices of telephone property reflected in this appraisal are intended to be as of September 30th, 1925?

Mr. Burr: Note my objection.
Commissioner Poor: Objection overruled.
Mr. Burr: Note an exception.

A. Correct.

Q. And let me ask you, what was the difference in the prices of telephone materials between September 30th, 1925, and June 30th, 1925, if there was any difference, in general?

Mr. Burr: I object to the question.
Commissioner Poor: Objection overruled.
Mr. Burr: Note an exception.

A. Well, I would have to refer to my Cincinnati notes, and I haven't them with me, to answer that question definitely.

[fol. 3260] Q. Now I am asking you as to the general trend of prices; can you answer it in that way?

Mr. Burr: I object to the question.
Commissioner Poor: Objection overruled.
Mr. Burr: Note an exception.

A. Well, of course I can give an answer as to the approximate trend but that answer would not apply as to any particular kinds; some were up and some were down and some were on somewhat of a level. I do not care to commit myself definitely as to any unit price without referring to my Cincinnati notes.

Q. Where did you get your prices for material in making the Cincinnati appraisal?

Mr. Burr: Note my objection.

Commissioner Poor: Objection overruled.

Mr. Burr: Note an exception.

A. From actual purchases and from Western Electric price lists.

Q. The same as you did in making the Ohio Bell appraisal?

Mr. Burr: Same objection.

Commissioner Poor: Objection overruled.

Mr. Burr: Note an exception.

A. Yes.

Q. Mr. Sloan, on page 55 of your Ohio Bell appraisal——

A. Do you mean of the State-wide case?

Q. In the State-wide case, yes; in your appraisal of exchange aerial cable, Account No. 242, you appraise 10 pair [fol. 3261] 22 guage cable at 28.26 cents per foot?

A. On what page is that?

Q. That is on page 55?

Mr. Burr: I think you must be referring to page 54.

Q. I should say page 54, near the bottom of the page.

A. Designated as 11 pair?

Q. 11 pair 22 guage, yes; at 28.26 cents per foot. On page 70 of the Cincinnati appraisal the same item appears and the unit price given is 18.04 cents?

Mr. Burr: I object.

Mr. McConnaughey: Do you object to my stating it?

Mr. Burr: I object to your stating it. You are taking something that is not in evidence, and I propose to object to it when the article or volume or whatever it is you are quoting from is offered in evidence.

Mr. McConnaughey: Well, may I complete my sentence with the understanding that you are objecting to it?

Q. (Continuing.) I will ask you if that is the unit price for that size of exchange aerial cable which you used in your appraisal in The Cincinnati & Suburban Bell Telephone Company's property?

Mr. Burr: I object.

The Witness: Which price?

Q. The price of 18.04 cents per foot?

Mr. Burr: I object.

Commissioner Poor: The Commission feels that it would [fol. 3262] be no aid in arriving at the valuation of The Ohio Bell Telephone Company's property to show what the valuation of the property of an entirely different company is; that while some questions might properly be asked of this witness on cross-examination to test his credibility and the method that he followed in making his valuation in the present case, we think that any comparison of any items should be limited to those items where it is first shown that the kinds of property are the same and all other elements surrounding the installation and labor costs and things like that are the same before there can be any comparison, and until that is shown the objection will be sustained on a comparison between the two valuations.

Mr. McConnaughey: Please note an exception to the ruling of the Commission.

Q. The item to which I called your attention, Mr. Sloan, is the item 22 guage cable, with PI in parenthesis—paper insulated, that is—10 pair——

Mr. Burr: From what are you reading?

Mr. McConnaughey: I am reading from the appraisal of The Cincinnati & Suburban Bell Telephone Company's property.

Mr. Burr: I object to it and ask that it be stricken out.

Mr. McConnaughey: I am simply asking to identify that item so we will know what we are talking about.

Commissioner Poor: The question has not been completed; proceed.

[fol. 3263] Q. (Continuing.) I will ask you whether that is the same item of property that is referred to at the bot-

tom of page 54 of your State-wide appraisal in this case under the heading "16 pair 22 guage"?

Commissioner Maullar: You do not mean the same item?

Mr. McConnaughey: A similar item; the same kind of property.

Mr. Burr: I note the same objection.

Q. Now what is your answer?

Mr. Burr: I object.

Commissioner Poor: Objection overruled.

Mr. Burr: Note an exception.

The Witness: It is the same kind of property but it contains different elements.

Q. What different elements does it contain?

Mr. Burr: I object.

Commissioner Poor: Objection overruled.

Mr. Burr: Note an exception.

The Witness: Shall I answer that?

Commissioner Poor: Yes.

The Witness: The general difference is this; in Cincinnati the splicing labor for connecting terminals is included with the terminals, whereas in the State-wide case it is included in the cable. Then my first answer is not exactly correct in that it is the same kind of property. The Ohio Bell Telephone Company, a portion of it is double wrapped cable; the Cincinnati property is entirely single wrapped; [fol. 3264] cable.

Q. I call your attention to the particular item on page 54; is that double or single wrapped?

Mr. Burr: I object.

Commissioner Poor: Objection overruled.

Mr. Burr: Note an exception.

A. 54 of which report?

Q. Of the Ohio Bell report?

A. That is a composite of the double and single wrapped.

Q. What do you mean by saying it is a composite; that the price is a composite of the prices of the two?

Mr. Burr: I object to the question.

Commissioner Poor: Objection overruled.

Mr. Burr: Note an exception.

A. Yes, sir. I might add that the two figures are not comparable because of a number of differences of that kind.

Q. Well, what are those differences; that is what I am trying to get at?

Mr. Burr: I object to the question.

Commissioner Poor: Objection overruled.

Mr. Burr: Note an exception.

A. Those are two important differences.

Q. Are there any other differences?

A. Well, there is a difference of a year in the date of the appraisal. My impression is that the wage rates are different.

Q. Just a minute, Mr. Sloan; you say there was a difference of a year in the date of the appraisal?

A. I think that is right.

[fol. 3265] Q. Now this appraisal is as of September 30th, 1925, as you have just stated?

A. No, there is not a year's difference; there is only three months' difference; that is correct. As I recall, without referring to my notes, there is a difference in the wage rate; there is a very marked difference in the supply expense of the two companies; there is a very marked difference in the supervision expense. There are so many differences between the two reports that you cannot make a direct comparison of the units.

Q. We are asking you particularly now as to the identity of these items of property; now are they identical items of property?

A. No, they are not.

Q. And the reason you say that is because one is single wrapped and the other is double wrapped; is there any other physical difference?

A. The Ohio Bell property is not entirely double wrapped; a portion of it is double wrapped and a portion of it is single wrapped. Now the double wrapped means a difference in the weight of lead and a difference in the insulation of the wire, and those things have been weighted into the composite price of the Ohio Bell Telephone Company property, so you cannot compare them directly. There is any number of differences and you would have to give weight to all of them before you could make a direct comparison.

And thereupon a recess was taken until 1:30 o'clock P. M. of same day.

[fol. 3266] Wednesday Afternoon

December 8th, 1926.

And also W. F. SLOAN, recalled as a witness for the purpose of cross examination continued his testimony as follows:

Cross-examined.

By Mr. McConnaughey:

Q. Mr. Sloan, in your Ohio Bell State wide appraisal how did you determine your unit costs on exchange aerial cable?

A. Exchange aerial cable?

Q. Yes.

A. I do not know that I can do anymore than what I told you yesterday, Mr. McConnaughey. That is the subject——

Q. Yes, the questions I asked you yesterday were with reference to the toll aerial cable. Now, was your method just the same with reference to exchange cable?

A. Yes, I thought we were discussing the whole subject. The method is identical.

Q. Now, did you use the same work order reports as the basis of your comparison of the performance of the company on your exchange aerial wire——

A. We did for the same sizes of cable.

Q. What I am trying to get at is, would the detail that you gave us yesterday on the toll aerial cable be the answer to a similar question with reference to the exchange aerial cable as to the details, how you worked up your unit price?

[fol. 3267] A. The method is the same. As I recall, in the case of that composite and quadded cable, there is an extra charge in there for testing and splicing that is not in the other. Aside from that difference, it would be the same. You see the installation of toll cable is a more complex proposition than aerial cable.

Q. I understand that, but what I am trying to get at is, did you use a different set of work order reports for the purpose of checking the company's performance on the exchange cable from what you did on the toll cable?

A. No, I think we used the same work orders to get the cost, the general cost, of erecting and splicing cable, and then we made certain studies. Then we made certain studies and have in our files certain data as to extra cost of testing and splicing toll cable, and allowance was made for that in the case of this composite and quadded cable, which is not present in the exchange cable.

Q. Then would your unit price be the same for the same sizes of exchange and toll aerial cable?

A. No.

Q. Where they were not composite?

A. No, I think all toll cable involves that extra testing, particularly if there are loading pots on the toll cable, and I think, as I recall, you will find a difference. I will just have to verify that.

Q. I have not checked that. I do not know. I am only asking for information.

A. I do not know myself. There should be a difference. I know it is present in the composite and quadded cable. Well, apparently on straight cable we made no extra allow- [fol. 3268] ance although I feel that some allowance is proper here. In the composite cable there was an allowance made. If you look on page 110, you will find some units for straight toll aerial cable, and you can compare those with similar items on page 55. I think you will find on the straight cable the units are the same.

Q. Well then, they were based on the same study?

A. Yes, except for the composite this extra allowance was made.

Q. Well, now, was there present in the inventory of the Ohio Bell Company a certain proportion of double-wrapped wire cable and a certain proportion of single-wrapped cable?

A. Yes.

Q. Now, just give us the way you set up your price, to show how the price of those two different styles of cable figured in your unit price?

A. We started out with the cost of single-wrapped cable as a basis, as I recall, and collected a certain amount of data as to the relative proportions of the double-wrapped and single-wrapped.

Q. The inventory does not show that proportion, does it?

A. No, it does not. Well, I do not see the data as to the relative proportions, but I find this note here, in the make-up of the aerial cable prices, that we have taken five per cent. above the cost of the straight single-wrapped cable to cover the cost of double-wrapped cable for that proportion.

Q. That is, you have added five per cent. because there was a certain amount of——

A. A certain proportion of double-wrapped cable in plant.

[fol. 3269] Q. What is the difference in price between single and double-wrapped cable?

A. That proportion covers—is a certain amount of rubber covered cable and silk and cotton cable, too, that is covered in this five per cent.

Q. Yes.

A. Why, the difference is about—it varies on sizes from about 22 to 28 per cent.

Q. That is, the double-wrapped cable is about from 22 to 28 per cent. higher than the single-wrapped cable, due to the difference——

A. There is extra lead and there is extra insulation.

Q. Now, would the extra insulation make a larger cable for a given number of pairs?

A. Yes.

Q. And that would call for more lead sheath?

A. Yes, and then there is another interesting point about it. The product of the Western Electric Company is single-wrapped cable; the product of the independent manufacturers, like Roebling and Standard Underground, is almost exclusively double-wrapped, although in the last year or two they have started to make single-wrapped, and the double-wrapped cable that is in the plant is of these other companies' manufacture, of these independent companies' manufacture.

Q. And you found that very largely in the plants of the independent, the former independent companies that have been taken into the Bell system?

A. I think a very considerable part of it is in there, and that illustrates the thing that has been possibly brought out before, that the Bell prices to associate companies are considerably lower than the commercial product.

Q. The Western Electric, as I understand you now, does [fol. 3270] not make any double-wrapped cable?

A. I would not say that they do not make it. I think they do make it. But their standard product is single-wrapped cable.

Q. What was in the Cincinnati system which you testified to? Was it the single-wrapped cable?

A. Yes, they have used that exclusively, for many years at least.

Q. Now, in building up your unit price in the Ohio Bell statewide inventory, you have added five per cent. because of the presence of this double-wrapped cable in the system?

A. Yes. Now, let me see. Has that been added to the material price or to the total price? I have forgotten just how your figures worked out. To the material price only.

Q. It did not affect the price of labor or any of the other items?

A. No, although, of course, the double-wrapped is a heavier cable; probably the labor should have been increased slightly on account of the weight.

Q. As a matter of fact you did not?

A. No, sir.

Q. Well now, have you the estimate reports that you used in building up that unit price?

A. For material?

Q. Yes. For both material and——

A. Well, the material prices were not taken from estimates. They were taken from current lists. The labor is what we showed you yesterday.

Q. That is the item as to which you testified yesterday you found upon your check against the company's performance that using your units you came out at seventy per cent. of the actual performance of the company, is it not?

A. No, sir, that seventy per cent. was as to the wire. This is cable we are discussing now.

[fol. 3271] Q. I see. Well, how did you come out with reference to the company's performance? Did we get that yesterday?

A. As I recall it, it is 98 per cent. That is, our units gave a result two per cent lower.

Q. That is what you used and that is what I think you said. Now, Mr. Sloan, will you read into the record the numbers of the estimate reports that you used in making your check with the company's performance of the exchange aerial wire?

A. Didn't we read those in yesterday?

Q. I think not. I think you gave some totals.

A. Are you on cable or wire now?

Q. Cable.

A. Exchange aerial cable?

Q. Yes.

A. All right, estimates 675, 624, 613, 586, 578, 570, 549, 528, 519, 500, 494, 489, 484, 482, 478, 471, 462, 448, 447, 445, 441, 440, 483, 468, 424, 423, 422, 413, 407, 403, 415, 409, 400, 405, 398, 397, 386, 381, 380, 376, 374, 599, 605, 608, 648, 649, 657, 668, 686, 689, 700, 769, 791, 815, 819, 848, 888, 965. I guess that is all.

Q. Do you know whether or not those are the same estimate reports that were used by Mr. Williams in making his check of the company's performance?

A. No, I did not.

Q. You do not know whether they were or not?

A. I do not know how he got his figures.

Q. How do you determine your units for exchange pole lines?

A. In much the same way; practically the procedure was almost identical.

Q. Now, you had a certain number of estimates completion reports that you checked with, did you?

A. Yes.

Q. Will you turn to those and let us see what they are?

[fol. 3272] A. Shall I read those numbers?

Q. Yes, read the number of the estimate reports that you considered in that connection.

A. 680, 630, 613, 595, 586, 578, 570, 539, 516, 508, 500, 494, 491, 489, 484, 482, 478, 472, 471, 462, 448, 445, 441, 440, 483, 424, 423, 422, 413, 407, 403, 415, 409, 406, 405, 398, 397, 388, 386, 381, 380, 376, 374, 580, 605, 634. The next one we did not consider. 657, 686, 700, 769, 791, 815, 819, 848, 965. I think that is all.

Q. How many poles was the total involved in that study?

A. Now, those poles that I just read were exchange poles only. There were 2,808 poles involved in those estimates. Now, in like manner there were additional groups of estimates which contained toll polls which were also studied, involving 3,236 poles.

Q. Where are those?

A. In here you mean?

Q. Yes, in your work sheets here.

Mr. Postlé: Is that in addition to the exchange poles?

The Witness: Yes. Do you want to know the numbers?

Q. Yes.

A. The estimates involved in the toll poles are as follows: 749——

Q. Will you state as you read the numbers the number of poles that were involved in each estimate?

A. The estimates used in testing our toll line labor units were as follows:

Estimate 749, 182 poles; estimate 697, 213 poles; estimate 645, no poles listed. Probably that estimate covered cross arms, anchors or some other form of pole line construction. Estimate 616 no poles listed; estimate 595 no poles listed; estimate 591, 12 poles listed; estimate 577, [fol. 3273] 21 poles; estimate 656, 20 poles; estimate 549, 118 poles; estimate 548, 46 poles; estimate 544, 26 poles; estimate 539, no poles; estimate 520, 50 poles; estimate 517, no poles; estimate 516, 2 poles; estimate 562, 3 poles; estimate 593, 329 poles; estimate 492, 151 poles; estimate 491, no poles; estimate 473, 87 poles; estimate 472, 767 poles; estimate 467, 109 poles; estimate 460, 9 poles; estimate 451, 99 poles; estimate 447, 21 poles; estimate 442, no poles; estimate 428, one pole. Just as an illustration of why we considered an estimate of that character with one pole in it there was $688.00 of material in that estimate, indicating that the estimate covered allied construction like cross arms, anchors and so forth.

Q. Now, of that material how much was what you would call major material?

A. $533.00.

Q. And what minor material?

A. $155.00.

Q. What is included under each of those heads?

A. I would assume, without looking up the estimate itself, that that $533.00 made up crossarms and probably anchor material. I would assume that the minor material might be braces and bolts and hardware or paint or steps or whatever is included under minor material. I would have to look at the estimate itself in order to state.

Q. Now, the purpose of this particular study was to determine the price of poles, as I understand it, and accessories?

A. No, the price of material was not taken from these.

Q. But it was to determine the unit price of poles that this study was made?

A. The unit price of labor.

Q. Well, the unit price of poles, particularly the element [fol. 3274] of labor in that unit price?

A. Entirely the element of labor in that unit price. You see the unit price was not considered from this element at all. We took the material price as of the date indicated in the appraisal, so that the prices of material that entered into these estimates was not considered.

Q. It was the price of labor that entered into the price of poles that you were working up this data for?

A. Yes, sir.

Q. So that the extent to which minor elements entered into it was not of any consequence?

A. No, except as we made some studies on the relation of minor material to major material, because it was necessary to find out what that relationship was in finally arriving at our ultimate major material item, as we intended to use it in our report.

Q. Now, your purpose being to find the relation of labor to the cost of poles, there being but one pole in this estimate, that would naturally be the major item material that you would take into consideration, wouldn't it?

A. Well, no. That estimate probably contained a number or crossarms, possibly two or three hundred crossarms.

Q. All right. Go ahead with your list.

A. Estimate 441, 91 poles; estimate 440, 47 poles; estimate 468, 33 poles; estimate 426, 16 poles; estimate 417, 215 poles; estimate 410, 93 poles. Now, I am not sure that the number of poles indicated is the total number that finally was taken off of these estimates. I do not think that it was.

Q. Why would you set down a different number in this study?

A. I think that was the amount shown in the portion of [fol. 3275] the estimate where the items were set out, but if other poles were purchased on the job, as frequently happened, they were recorded in another part. But what we finally dug out was the actual number of poles erected. Estimate 403, 35 poles; estimate 368, 23 poles; estimate 594, no poles. Now, there is one where the summarizing

has not been carried across. There was over a thousand dollars of major material involved in that estimate. No. 637, the number of poles has not been recorded. Estimate——

Q. Is it given right here?

A. Now, starting with estimate 594, 14 poles; estimate 637, 25 poles; estimate 640, 79 poles; estimate 738, 259 poles; estimate 1010, 79 poles.

Q. Now, those estimate numbers are in large part the same numbers that were used in your study of exchange aerial wire, are they not?

A. You mean cable?

Q. Yes, cable, I should say.

A. Yes, many of the numbers seem to be the same. Now, I think there is a thing that should be pointed out. These estimate numbers for specific estimates, when a large volume of work is to be done, they cover a number of codes, pole line code, aerial cable code, the underground cable code, and the underground conduit code, and the sum of any particular estimate may be very large in amount, so that the work is done as a unit, that is, the gangs are organized and the thing is considered on a wholesale basis there, although in a particular estimate the amount of work assigned to that code may be small, yet the work is done in a wholesale manner, because of the fact that the gang is organized to complete the estimate, which may be [fol. 3276] very large in amount.

Q. Are you able to tell from looking over those estimates or any data that is contained in your work sheet there which of them are entirely for new work and which for reconstruction of existing work?

A. They are all for the setting of new poles. There is no reconstruction involved in it. There may have been some reconstruction work done on that estimate, but this is the labor assigned to the new construction.

Q. Is that separated in the estimate reports in such a manner that you can tell?

A. Yes, all that work that goes to reconstruction or maintenance; the removal is carried under a separate report.

Q. There isn't anything of that kind in these accounts?

A. No. Oh, it is possible that a slight interchange might take place, but it would be very small. But estimates are

prepared both on reconstruction and the maintenance, so that each one is under supervision, and there is no tendency to switch cost from one to the other except as it is done inadvertently. Some people have made the statement that these things are valueless because of the fact that charges are indiscriminately put from one code to the other. That is not true.

Q. Who does assign the charges from one code to the other in making these reports?

A. Well, the foreman in charge of the work assigns the time of his men.

Q. He is the one that makes his report and makes his assignment to different classes of work done on the same estimate?

A. Yes, sir.

[fol. 3277] Q. What you have done is to take off the estimates as they have set them down?

A. Yes, sir.

Q. What was the total man hours that you have applied to that bunch of reports?

A. You mean the total man hours that these poles actually required?

Q. No, that you assigned to them here?

A. You mean my test sheet?

Q. Yes, your test sheet.

A. Well, in direct answer to your question, Mr. McConnaughey, the material estimated on these specific items for exchange line construction is tabulated on this sheet which I am referring to in my notes. The poles were tabulated by size and the number of each size. The other incidental matter such as back braces, anchors, guys, pole guys, crossarms, guard arms and various items which are ordinarily accounted for under the classification of pole line construction, were also listed. Against those quantities were put a set of tentative or test man hours, which represent my experience as normal costs of doing that kind of construction, and the product of those test hours against the quantities erected, gave a total of 45,946 hours. Now, the actual hours involved or the actual hours recorded on the estimates are 63,609 hours.

Mr. Postle: The number please, Mr. Sloan?

The Witness: 63,609. That is the ratio of the test hour

which we applied gives a result of 72 per cent. of the actual time required.

Q. Now, what did you do with that 72 per cent? Did you adjust your prices or leave them as they were?

A. No, I left them as they were.

[fol. 3278] Q. To that extent you did not follow the experience of the company?

A. No, the labor hours which I used would give a result 28 per cent. below the actual cost to the company.

Q. The prices that you have assigned to the different sizes of poles you considered to be 28 per cent less than the company's experience showed?

A. Yes. One reason for doing that was that in the last year or two the company has begun the use of hole digging machines, which was not entirely reflected in these units, so that in my opinion on a wholesale basis the units that I have used are a reasonable and fair amount, although they do give a result 28 per cent. below the actual experience of the company.

Q. Now, will you take your 20 foot pole, of which you show a unit price of $12.22, and analyze that unit price for us?

A. What page is that shown on?

Q. It is on page 53 of the report.

A. What page?

Q. 53.

A. You mean the pole where the charge of $12.22 is shown?

Q. That is right, 20 foot pole.

A. The cost of the pole delivered was $2.15; the labor is $5.55; the supervision, truck cost, and so forth, is $2.48; giving a total of $10.18. We increased those dollars 20 per cent. to cover items not included in the inventory, such as anchors, guys, and I think that covered pole steps, various items of that character, which I can explain. Does that give you the right answer?

Mr. Postle: It is $12.22—you gave $12.10—no, you are right.

[fol. 3279] The Witness: It gives $10.18; multiplied by 1.2.

Q. Now, have you allowed 20 per cent for associate material all through your prices?

A. On exchange pole; a different percentage on toll.

Q. What was the percentage on toll?

A. 23 per cent.

Q. That extra three per cent. was because of travel and——

A. No, it isn't anything of that sort. It is extra materials. Well, it would include also the labor of installing the additional material. That would come back to traveling and incidentals and all of the things associated with the labor of putting it up.

Q. There aren't any items of associate material that goes with toll poles that do not belong to city or exchange poles?

A. No, the same character of items, the anchors and guys and the steps, and where they are painted, the paint and material of that kind.

Q. Why do you allow a larger percentage for the associated items on the toll poles?

A. That was based on a study of the two items of minor material as listed in these reports, together with a study of what those same items amounted to; I took eight or ten large appraisals where those things had been listed out. I took the New England Company experience and the Chesapeake & Potomac Company experience, and I don't know—quite a number of other appraisals, where those items had been listed out, and arrived at a percentage from that study.

Q. And in fixing that additional three per cent., you used the experience of this New England Company and the [fol. 3280] Chesapeake and Potomac Company?

A. Yes, I tried to arrive at a fair percentage that was normal for that character of work.

Q. What did the study of the toll construction in Ohio show you with reference to the extra cost of associate material on construction of poles?

A. That was not available except on these particular—I do not know that this major material—it is not possible to derive that figure from these estimates.

Q. Where did you get it?

A. Well, I told you, by taking these other appraisals.

Q. That is, you took the appraisals of the New England Company, of the other companies?

A. The Chesapeake & Potomac, Maryland and West Virginia, District of Columbia, five New England states.

Q. Well now, on exchange pole lines your unit price for 30 foot average class C poles is $25.90, and the same pole, 30 foot average class C in your toll pole appraisal on page 108, the unit price is $28.36. Now, I understand that that difference was because of these associate materials, and that you added it because of the experience of the New England Company and the Chesapeake & Potomac Company?

A. No, I do not think you have a separate list as to that. We made a separate list of toll performance as distinguished from exchange performance. There are several points involved in that thing.

Q. All right, let us have them.

A. The thirty foot exchange pole is slightly less in cost than the toll pole, that is, in other words, the toll pole is a slightly heavier pole on the average, for a thirty foot pole, [fol. 3281] of a slightly heavier or higher class than exchange. To illustrate, the cost of the pole, thirty feet in length, for exchange is $8.77, whereas the average thirty foot toll pole is $9.16.

Q. Now, where do you get that?

A. That is a study made of the composite sizes, and that was supplied me by the engineers of the company, the toll poles and the exchange, classified by the engineers of the company.

Q. Then a class C pole among the toll poles does not mean the same as a Class C pole among the exchange poles?

A. Those classes are not strictly according to the A. T. & T. classification. They are a composite of the poles in that class. That is correct.

Q. Now Mr. Williams has testified and you have testified here before, as I remember it, that the A. T. & T. classification of poles has been used?

A. Well, it has been used—maybe I can put it this way. As I understand they did not have the total number of poles class A, class B and Class C, but they pointed out a composite for both exchange and toll. Now, the toll poles are slightly greater—that is, the class that we have indicated in the inventory is the nearest class that the pole belongs in, although it may be half way between C and D.

Q. The classification was based upon the price of the pole at the nearest class?

A. We took the differential up to the point where the pole fell; if it fell part way between C and D, we took that differential.

Q. Then you appraised individual poles in making your study?

A. We tried to appraise the pole as near to its weight [fol. 3282] for a given height as we could get it. Suppose a thirty foot pole, class C, weighs 550 pounds; now suppose the average of the exchange poles was say 520 pounds; and the toll poles were 560 pounds; we made a differential due to the variation from that class.

Q. But did you weigh the poles to determine the weight of them?

A. No, that information was supplied by the engineers of the company.

Q. Well, the fact is you had a different material price for the class C poles used for toll and for exchange?

A. That is true.

Q. What was the difference?

A. That is poles designated as class C, those designations in the inventory meaning nearest to that.

Q. According to the classification in the inventory we understand you are testifying?

A. Yes, sir, that is right. Do you want that difference?

Q. Give us the price of each.

A. On the thirty foot pole——

Q. Can you give us the price of the exchange and the toll poles, with all of the different items in parallel columns, stating each of them, all of them?

A. You mean the poles, labor and material? Suppose I give you the exchange poles first and then the others.

Q. All right, go ahead.

A. The 15 foot exchange pole, cost of the pole delivered——

Q. Now, wait just a minute. I am just asking about the thirty foot pole.

A. All right. Thirty foot exchange pole, cost of the [fol. 3283] pole delivered, $8.77, labor $8.86, supervision, truck and incidental, $3.95, total $21.58; 20 per cent. additional brings the cost to $25.90. I think that is the price in the inventory.

Q. $25.90 is right, yes.

A. Going to the toll pole for the 30 foot length, the average cost of the thirty foot pole is $9.16; labor, $9.17; supervision, truck and incidental, $4.73; total $23.06; addition of 23 per cent brings the cost to $28.36.

Q. 23 per cent?

A. Yes. Don't that give you that increase? Does that give you the answer?

Q. Now, that difference, part is in the pole and part in the labor, as you have indicated?

A. Yes.

Q. You have used a percentage of 20 per cent. in the case of exchange, which is for the accessory materials?

A. And labor of installing them.

Q. And you have used 23 per cent. in the case of the toll?

A. Yes, sir.

Q. You used that why?

A. Because the inventory did not contain that accessory material.

Q. Why did you use 23 rather than 20?

A. Because our study indicated that the cost was greater on the toll pole.

Q. Did your study of the Ohio Bell results indicate that?

A. The study of all the data we had indicated that, yes.

Q. How about the study of the Ohio Bell results?

A. Well, as I said, it is not possible to draw off all of that information from the records that we have.

Q. From the records that you have what was the Ohio Bell's performance in that respect?

A. I told you we could not get it. If we could not get it, [fol. 3284] we could not get it.

Q. You did not get anything then from the Ohio Bell?

A. Oh, I would not say that. These columns here show a certain amount of major and minor material.

Q. What do they show?

A. I cannot answer that right offhand here. I can give you the studies we used to arrive at that percentage.

Q. All right. Let us hear them.

A. We did have some data, too, at Dayton, in the old Dayton appraisal that material was set out.

Q. Was that toll data?

A. No, that was exchange in the Dayton appraisal, but

we did have that available. That is the nearest that I can give you for Ohio Companies. Dayton on exchange showed 23½ per cent.

Q. But on exchange you use only 20 per cent.?

A. Yes, sir.

Q. What I am trying to get at is why you used the 23 per cent. and what result in Ohio justified that?

A. Dayton was an exchange appraisal.

Q. Yes, sir.

A. Dayton showed 23½ per cent. for those same items.

Q. That was made when?

A. In '22.

Q. '22, I think, yes.

A. Somewhere along there. The study of Massachusetts, Rhode Island, Maine, New Hampshire, Vermont, West Virginia and Maryland showed 18 per cent. So, considering the general data that I had——

Q. Is that from toll?

A. That is exchange. Considering the Dayton situation, where we had fairly good data, showing 23½ per cent., and considering seven other states where it ran eighteen [fol. 3285] per cent., I arbitrarily rounded it off to twenty per cent.

Q. How did you get your 23 per cent. figure on your toll?

A. In practically the same way, except that I did not have any toll data in Ohio.

Q. What was the experience in these other states on toll poles as to accessory materials?

A. It varied from 14.8 per cent. in the case of Maryland to 26½ per cent. in Massachusetts.

Q. What were the percentages in other states?

A. Rhode Island, 18.8; Maine, 24.8; New Hampshire, 21.7; Vermont, 15.3; Maryland, 14.8; West Virginia, 10.6 per cent.

Q. Now, how did you figure on those percentages, to get a result of 23 per cent. for Ohio?

A. By considering my knowledge of both properties, both of the Ohio property and my knowledge of these other states, selecting the one—selecting a differential that in my opinion represented the difference between or the nearest to the conditions in Ohio.

Q. Well now, what conditions or circumstances in Ohio

do you think justified using that percentage of 23 per cent. as compared with twenty per cent. on exchange poles? What differences are there?

A. There would be heavier guys. The item is principally guys and anchors. The lines are guyed very heavily on account of the sleet conditions in Ohio.

Q. That is the principal point of difference?

A. Well, it would be in the toll case, yes. The toll lines of the Ohio Bell Company are very heavily guyed and very heavily constructed, principally on account of the fact that this is a sleet belt.

[fol. 3286] Q. How about the painting?

A. Not so much.

Q. There is not so much of that on the toll as there is on the exchange?

A. No, that is true.

Q. Did you take that into consideration?

A. Yes, I did.

Q. What else did you take into consideration?

A. That is practically all, just those things that are normal on toll line construction.

Q. Did you compare the conditions in Ohio with those in West Virginia where your study showed 10.6 per cent as a proper percentage to add?

A. I did.

Q. What were the differences between those two states justifying twice as much in Ohio as in West Virginia?

A. Yes, and I think it is proper. West Virginia is not a sleet belt state, as Ohio is. In the last few days we have had ample proof of the advisability of heavy guying on toll line construction. In the last three or four days there has been a very heavy sleet deposit all over this northern part of Ohio, and yet up to day before yesterday the company had only lost 470 poles, which is very remarkable, considering the heavy deposits of sleet.

Q. And you consider that it is proper to use twice as large a figure for accessory materials on toll poles in Ohio as in West Virginia?

A. Surely. West Virginia apparently was very low. It is lower than any of the other states. And it is the result of my judgment after having seen all of these plants. It is not any case of putting in a figure. I am familiar with the properties. I know the conditions that they have to

[fol. 3287] meet and how the lines of the company are built.

Q. The highest figure is 26½ in Massachusetts?

A. Yes.

Q. That is the result of an actual study?

A. That was the result of an actual inventory.

Q. That is the way it came out according to the money that had been spent in Massachusetts, wasn't it?

A. That is correct.

Q. Now, how do conditions compare in Massachusetts with Ohio as to the necessity for that sort of construction?

A. Well, as I recall in the Massachusetts conditions they have some sleet there, but they have very heavy snowstorms, and the roads are very crooked in Massachusetts, sharp turns and so forth, which call for heavy guying at the corners, so that I did not allow my percentage of guying that I did in Massachusetts. I think the 23 per cent is a very moderate and a reasonable amount for that.

Q. And you also consider that 20 per cent is a very moderate and reasonable amount for the exchange?

A. I do.

Q. Now, you had some data with reference to the amount of accessory material on the exchange jobs that you examined, didn't you?

A. You mean in these specific estimates?

Q. Yes.

A. Surely; I had it on toll, too, as far as the items which are called major and minor material here, but that don't give you a true picture of the guying that goes on any particular job, because some of these estimates have no poles at all. They are estimates that cover the erection of only guys, so that you cannot relate that material back to a base to determine a percentage for guying.

[fol. 3288] Q. Wouldn't that be a reason for excluding from your list of jobs to be studied to get the experience of the company such an estimate as that?

A. No, because I only used that estimate to determine the cost of erection of that kind of material. These estimates in my opinion are pretty well diversified as to poles and crossarms and guys and anchors, that is, for determining the cost of those things, that is, for the cost of poles and the crossarms.

Q. Then you do not get the twenty per cent that you allowed for accessory materials on your exchange pole line

from your study of these works estimates; that also is a judgment figure?

A. No, it is not a judgment. It is based on actual experience over a large number of the properties.

Q. But not over the Ohio properties?

A. Well, the exchange was fortunate enough to have Dayton, where it was 23½ per cent.

Q. 23½?

A. Yes.

Q. And that was in 1922?

A. Yes, I had that additional data for Ohio I did not have in the case of toll.

Q. Where do you get the figure for supervision, trucking and incidentals?

A. From the construction records of the company.

Q. Have you used a uniform percentage all the way through for that, applying to all of them different prices?

A. Yes, that was taken from the total payroll of the construction payrolls, so that that percentage is uniform.

Q. What is the percentage that you used?

A. For supervision?

Q. Yes.

A. 22 per cent.

[fol. 3289] Q. How did you determine that percentage?

A. Well, I have the actual determination here. By the way we supplied Mr. Hagenah with a copy of this at the last hearing.

Q. We would like to put it in the record.

A. The total payroll charged to construction for eighteen months ending June 30th, 1925 is $2,335,388.00. The total amount charged to account 706-01, which is plant supervision, and account 703, tool expense, was $380,601.00. Now, we deducted from that—oh yes, I see what we did. We then took the total engineering, as shown on the records of the company, and took five per cent of that,—deducted from the total engineering five per cent of the construction cost, because we had decided to use five per cent as a normal engineering amount. A part of the accounts of the company show engineering and supervision combined. So we took that account and deducted five per cent of the construction cost and put the remainder in with that supervision account.

Q. That five per cent that you deducted you covered later by your overhead of five per cent?

A. Yes.

Q. I understand.

A. So that that addition of that residue of engineering gave a total—amounted to $135,251.00, added to the other item which I just read of $380,601.00, gives a total of $515,852.00. The ratio of that expense to the payroll was 22.09 per cent. We just rounded that off at 23 per cent. Those figures are on the records of the company.

Q. Where have you included the item of freight in your unit cost?

A. Direct freight to the central point is included right with the material.

Q. That is in this case of the class C 30 foot pole that [fol. 3290] amount of $8.77 in exchange pole lines includes something for freight?

A. Freight delivered to a central point like Cleveland or Columbus.

Q. How much of that $8.77 is freight?

A. What we would have to do would be to—it seems to me that the freight we used was 23½ or 24 cents a hundred weight, or was it 34? That is merged right into the cost of the pole. Here is data that we used in arriving at this composite pole price. Now, take a true thirty foot C, a pole that is actually a thirty foot C, it weighs 350 pounds, and the freight rate delivered to Columbus—we have selected Columbus as the central point in the State—was 39 cents.

Q. 39 cents?

A. Per hundred weight—cwt., which gave them a pole weighing 350 pounds $1.36.

Q. So that $1.36 of that $8.77 is freight?

A. Approximately, because the poles are not true class C or class B poles. That is the nearest classification. But that is about what that is.

Q. What adjustment did you make from a true class C pole to the poles that you were appraising in order to get the figure that you used? I have not been able to follow you on that?

A. We made a study of what the true size of those poles was. As I recall the study we made we took certain data on those inventories where the actual kinds of poles were

listed, the number of true thirty C's and the number of true thirty B's and so on, and as I recall—I do not seem to have the data here, but we actually weighted those poles out to see if they were above a true 30 or slightly below, [fol. 3291] or just where it fell, and we adjusted our price accordingly.

Q. As to this thirty foot pole you found that the average was actually above a true thirty foot C pole, as I understand?

A. No. On the toll that is true. That is where we got $9.16. It is the one that is nearest to there. The toll pole may be thirty C plus and the exchange pole may be thirty C minus, or they may both be slightly above the thirty C. It was the nearest approach we could make to the actual kind of pole that was there.

Q. Now, of this material price of $8.77 on the class C pole, exchange pole, $1.36 was freight?

A. Approximately $1.36 would be the correct freight for a true thirty foot C cedar pole.

Q. Now, in this price of $25.90, how much is freight as you have actually figured?

A. Well, I cannot tell, because we took true 30's delivered, true 30 foot C's delivered, true 30 foot B's delivered, and got the point in between those two sizes where the pole belonged. Now, there is another factor that I have not told you about. Some of these poles are chestnut, some are locusts. We have tried to weight this price to account for that, too. They are not all cedar poles. So that there is a weighting in this price for chestnut or whatever kind there are in the plant.

Q. How did you figure that out?

A. Well, from the same data which we got from the company. I do not know whether we have it here. Apparently we have got it here. Here is a sheet entitled, "Determination of the average 30 foot exchange pole." I think I better read a little description of that into the record.

[fol. 3292] Q. I think so, yes.

A. The company did not have a complete inventory of each size of poles, but they did have an inventory of a large number of poles from previous inventories, which classified the poles exactly as they were. So we took these partial inventories, which represented a very large number

of poles, but, of course, did not represent all of the poles, and weighted those poles by size according to price for each size, and arrived at a composite price for each pole, which considered not only its classification as to size, but whether it was chestnut, eastern cedar or western red cedar, and for each given length the composite price as shown in our report was determined from a consideration of all those factors derived from these partial inventories, which was the best information we had available as to the true size of the poles in the plant.

Q. Now, in the case of the 30 foot class C poles, that average price was what?

A. For exchange the average composite price of the 30 foot poles was $8.77.

Q. Including freight?

A. Including freight and supply expense.

Q. How much of that average price was supply expense?

A. 5.7 per cent.

Q. That is the same percentage that you have used all the way through on all of your items?

A. That is correct. Now, the corresponding price for the thirty foot toll pole, which evidently was slightly heavier than the exchange pole, was $9.16, including freight and supplies.

Q. Now, I understand that you have made a separate [fol. 3293] calculation of sizes and different classes of toll poles, pricing them out and getting the total from these previous inventories?

A. Yes.

Q. And in that way you arrive at this higher price of $9.16?

A. Yes, we try to give weight to the fact which the data seemed to prove that the toll pole certainly in the case of the thirty foot pole was slightly heavier than the exchange pole.

Q. As shown by the previous inventories of the company?

A. Yes, which covered a very large number of poles, but which did not cover all of the poles.

Q. Now, can you tell me how many poles the data that you did have, both of exchange and toll, did cover?

A. Yes, we can tell you by adding these columns.

Q. Have you the total there in one figure?

A. Yes, we have. That is right. The total thirty foot exchange poles amounted to 56,697. You want it for how many sizes?

Q. Oh, just confine it to the 30 foot pole.

A. That was the figure for exchange, and for toll the figure was 93,770.

Q. All right. Now, Mr. Sloan, how did you determine your unit prices of exchange aerial wire?

A. Well, the material prices of the unit are based on prices current as of that date. The labor was determined from the performance records, that is, it was not determined from the performance; that was used as a guide in checking our test units. In case of toll it was 2,762 miles.

Q. What about exchange?

A. That was based 326 miles.

[fol. 3294] Q. What work estimates did you have to compare that with?

A. Well, I guess I did not read those numbers into the record. We discussed them yesterday, but I guess I did not read the numbers into the record. Do you want the numbers?

Q. Yes, if you please.

A. The numbers, the estimate numbers which we studied in checking our tentative test units for aerial wire were as follows, exchange aerial wire were as follows: Nos. 697, 630, 613, 578, 549, 548, 544, 539, 516, 484, 482, 473, 472, 467, 447, 441, 440, 483, 468, 422, 407, 403, 415, 400, 374, 640, 738, 769. That is all.

Q. Do you say those involved 326 miles?

A. 326 miles of wire, of exchange wire.

Q. Of exchange wire, yes. That includes all of the different kinds of exchange wire that are listed on this page?

A. Well no, it don't include all of the sizes here. We could not find records apparently of all of the sizes, but it includes most of the principal sizes.

Q. Now, did you find any record of the bare iron wire .165, which refers to the size, I understand?

A. Yes.

A. Which size did you call for?

Q. 165.

A. No, there was none of that in here.

Q. How about .109? There seems to be more of that than anything else?

A. Yes, there was 71 miles of .109 bare iron in 1922, 92 miles in 1923 and 150 miles in 1924.

Q. Now, you pursued the same method in getting at your check of those prices as you have previously described?

A. Yes, I think I read you the percentage in there in the [fol. 3295] record yesterday.

Q. On exchange aerial wire?

A. Wasn't that it?

Q. You were to furnish a copy of the exchange aerial copper?

A. Didn't I read from our test sheet about 72 per cent.? Didn't I read that into the record, yesterday.

Q. I don't think you read the detail.

A. Anyway that is what it was. Our test units gave a result only 72 per cent of the actual performance.

Q. And your price, your unit price, on that exchange aerial wire is $30.78 per mile?

A. Which size?

Q. That .109 that you have just been talking about?

A. That is for the iron, yes. .109 bare iron, $30.78 a mile.

Q. Now, is that the same material that you priced in the Cincinnati & Suburban Bell appraisal at $21.77?

Mr. Burr: I object.

Chairman Marshall: They are similar. It is not the same.

Mr. McConnaughey: I mean the same kind of wire and the same size.

The Witness: Well, do you——

Mr. Burr: Just a moment. There is an objection. That is simply getting a comparison in in a left hand way between the two.

Commissioner Poor: The objection will be overruled.

Mr. Burr: Note an exception.

Mr. McConnaughey: The objection is overruled. You may answer the question.

The Witness: The Code number of the wire itself is the [fol. 3296] same. The make-up of the unit is probably different. I do not know what was contained in the Cincinnati unit.

Mr. McConnaughey: The question is whether the material is the same.

The Witness: So far as the wire is concerned; the unit contains other material, of course, besides the wire.

Q. What other material does it contain?

A. Insulators and tie wire.

Mr. Burr: May it be understood that my objection is noted to all of these questions, without making it necessary for me to interrupt Mr. McConnaughey each time, and exception noted after the objection is overruled?

Commissioner Poor: Yes, that may be done.

Mr. McConnaughey: That is all right.

Q. You pursued the same plan of including the cost of the associated items in your unit price in both instances, did you not?

A. Yes, although I am not prepared to say that the associated items were the same. Of course, the make-up of the unit was entirely governed by the conditions at Cincinnati as to loading and wage rates, and so forth, which are not necessarily the same as they are here.

Q. But it is the same material?

A. So far as the wire itself, the .109 wire, it is the same.

Q. What was the difference in the material prices between those two appraisals?

A. I cannot tell you without referring to the Cincinnati notes. I haven't those.

Q. Will you do that and give us that information later?

A. I will, if that is the ruling of the Commission, yes. I do not know what the situation is as to putting that case [fol. 3297] into this record. If the Commission rules that way——

Q. We are not putting that case into the record. We are just asking you to answer this one question.

A. I will be governed by Mr. Burr and the Commission's ruling on that matter.

Mr. Burr: We will, of course, object to the admission of the comparison when it is offered, and in order to save Mr. Sloan the necessity of making the comparison, we object to his saying that he will do it.

Commissioner Poor: Will it be sufficient if it is understood that Mr. Sloan will have his figures here the next time and then pass on it at that time.

The Witness: I would like to state that I do not care to put it into the record without being permitted to make a

full explanation as to why there are differences, because it goes into the whole question of loading, wage expense, and every other item that goes into the unit, and I would not like to put it in without being permitted to make a full explanation of those items.

Q. All right. I do not see why we can reasonably object to your making a full explanation. We would like to know what the explanation is ourselves.

A. There are some very good reasons why the price is different, Mr. McConnaughey.

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[fol. 3298] Q. Did you make any distinction between price of exchange and toll aerial wire, Mr. Sloan?

A. Yes, we did.

Q. I think yesterday you gave us the detail of your study. Was that the toll aerial that you gave? That was the item as to which your tentative units were 70 per cent of the actual performance of the company?

A. That was on toll, wasn't it?

Q. Yes, that was on the toll, as I remember it. I am not sure from these notes whether you were speaking of toll then or exchange.

A. Yes, the toll tentative units gave a result of 70 per cent of the actual performance, and the exchange units gave a per cent of 72 per cent of the actual performance. The two percentages were so close that we used the same man hours for both toll and exchange. But there is a very considerable difference in the way that we set up our unit.

Q. What is the difference?

A. The material is, of course, the same. The material for that size you have been discussing, .109, *bear* iron wire, [fol. 3299] the material, including freight and supply expense and insulators and miscellaneous tie wire, and so forth, is $11.46 both for exchange and for toll. But the wage rate on unlocated gangs, that is, toll line gangs which are traveling, is lower than it is for exchange gangs. The difference is made up by reason of the fact that the company allows board and lodging *wild* traveling, which is expressed in our percentage for incidentals. Now, while in the exchange case the rate was 80.2 cents per productive man hour, in the toll case it is 75.2 cents. The supervision is the same in both cases, 22 per cent of the labor. But the inci-

dental expense, which includes truck, stable and garage and board and lodging is only 28 per cent in the case of exchange, whereas it is 35 per cent. in the case of toll, so that in the case of exchange, I arrive at a total of $30.78, whereas on toll, it is $30.35.

Q. What is the total cost of labor—well, give us the amount of each one of those items in the exchange aerial wire price on that size, .109 bare iron?

A. Well, I don't understand your question.

Q. Give us the items that make up the price of $30.78. You have given us the material price, $11.46. Now, give us the other detail.

A. The cost of a mile of wire is $8.30; the insulators are $1.90. What is it you want? The material make-up?

Q. Well, that and all of the detail?

A. I will give you the whole thing. The tie wires are 14 cents. The other miscellaneous materials, 50 cents a mile. That would include test connectors, sleeves and other mis-
[fol. 3300] cellaneous material which gives a total of $10.84. Supply expense, 5.7 per cent, is 62 cents. Total, $11.46 per mile. Exchange wire, labor, $12.88.

Q. Just a moment. Is the material price just the same in each case?

A. Yes, $11.40.

Q. Yes. All right.

A. The exchange labor is $12.88. Toll labor is $12.03. The exchange supervision is $2.83. The toll supervision is $2.65. The exchange incidentals is $3.61. The toll incidentals is $4.21. Now, the sum of those items ought to give you the two units.

Q. In a similar way you have worked out each one of these items of exchange aerial wire, whether of copper or iron or steel?

A. Correct.

Q. How did you fix the price of the drop wires? The unit price is $3.72. How did you arrive at that?

A. Just a minute. We have a little data on that. In 1924, the company installed 46,543 drops. After adjusting their expenditures to make the supply expense 5.7 and the supervision 22 per cent, that cost amounted to $3.92 per drop. In the first six months of 1925 the company installed 24,466 drops. After making the same adjustments, the cost reduced to $3.72 per drop.

Q. Why did you make these adjustments?

A. Well, we wanted the supply expense and supervision uniform throughout the appraisal.

Q. Well, the supply expense and supervision as shown by the actual performance on these drop wires was different?

A. Oh yes, considerably greater.

Q. And you found $3.92 during 1924; and $3.72 in the [fol. 3301] first six months of '25.

Q. A drop of 20 cents?

A. Yes, that is the figure we used.

Q. How is that price made up, how much of material and how much of labor?

A. These figures may not come out exactly to that. I get $1.62 for material—these won't come out exact, because I am doing it on the slide rule—labor $1.49; supervision 32.8 cents—call it 33 cents; and incidentals, 27 and a fraction cents. That ought to give a total of $3.72, or within a cent of it. If you would divide this whole thing on a machine, it would. Doing it exact, you will find it comes out $3.72.

Q. All right. Is there any difference between your units on underground conduit for exchange and for toll?

A. Yes, I think I pointed that difference out yesterday. Didn't I give you the detail this morning of a 16 per cent. differential on toll to make it come to the actual cost?

Q. I think that has been covered. How about the exchange underground cable? Is that difference from the toll underground cable?

A. I think—I will verify this statement in just a minute—I think the same thing is true in toll underground cable as was in toll aerial cable. On the standard sizes, that is, cable that is neither composite or quadded, the same unit was used, but in the case of composite cable or quadded cable, there was a differential, an extra allowance made for toll testing.

Q. Now, have you confirmed that?

A. That is correct.

Q. Yes, that is correct. You testified, I think, in fact, I [fol. 3302] know, as the record shows, to the per cent. condition of this property. Tell us what examination you made for the purpose of determining per cent. condition?

A. Well, I, of course, spent a great deal of time person-

ally inspecting the property. I believe in my direct testimony I stated the approximate amount of time that I had spent on a personal inspection of the property, the miles of line I had covered, and the fact that I had visited, as I recall 120 or so central offices. And there is a statement in the direct testimony.

Q. In your toll line appraisal you also testified as to the percentage condition. I call your attention particularly to your testimony with reference to other equipment of central office, account No. 222, I believe it is, on page 11 of the toll property. You gave a per cent. condition of 80 per cent. to that class of property. In this appraisal your percentage is 91. Is that difference based upon any specific examination? How do you account for the increase in the per cent. condition of those two?

A. Are you speaking of toll other equipment of central office?

Q. Yes.

A. I believe if you will examine the record you will find I accepted the company's figures on certain items, among which were land, buildings, other equipment of central office, furniture, fixtures, tools and so forth.

Q. Yes.

A. And I presume that figure that is included here is the company's percentage. By reason of the fact that I decided to take their figure on those items, I did not make any special inspection of it for this purpose.

Q. Then that 91 per cent. does not represent your in-
[fol. 3303] dividual judgment?

A. No, I think you will find the record discloses that I accepted the company's figures on certain items.

Q. As a matter of fact it does as to that, excepting as you say you did make a cursory examination as you went about?

A. Well, as I went in the offices, yes. I can see why that would be changed in the two years, because the company has been rehabilitating the central offices to a considerable extent.

Q. You do not stand back of that 91 per cent.?

A. No, not particularly. I think it is a fair percentage for that property.

Q. What do you think of your percentage that you gave

in 1923 of 80 per cent. Did you make an examination at that time?

A. Yes, sir.

Q. That did represent your judgment then?

A. Yes. Of course, the company has put in a considerable amount of furniture and central office equipment since that date, and I have no doubt that they have put in enough new furniture to easily bring the percentage up to that figure. Oh, Mr. Cooke points out that that percentage or that item for other equipment of central office is a combined figure of toll and exchange both, whereas in the other case it was only toll. But anyway my answer stands, that I accepted their figure. But I think that is a reasonable percentage for that item.

Q. Well now, on this item of toll aerial wire that we have just been talking about, on the copper wire in the toll line case, you testified to a per cent. condition of 95. In [fol. 3304] this appraisal you testified to a per cent condition of 98?

A. May I see that toll appraisal please?

Q. Just a moment. I will look for the place. I call your particular attention to copper wire.

A. Why the main point that I considered there was that there has been a considerable amount of additional new copper wire erected as between the dates of these appraisals.

Q. Now, how much has been erected?

A. Something over 2,000 miles.

Q. Something over 2,000 miles?

A. That is on specific estimates. There may be additional amounts.

Q. Something over 2,000 miles out of a total of 62,783.

A. And the property has been materially improved by taking up slack, putting it in much better physical condition than it was in 1923.

Q. Of course, two years of time has elapsed and whatever wear and tear would operate in that time has taken place, hasn't it?

A. In the case of copper wire there is no physical deterioration of the copper wire itself unless it is in the vicinity of sulphur fumes or smoke, so that two per cent. is certainly——

Q. Three per cent.

A. 98?

Q. 95 to 98.

A. It is certainly in 98 per cent. condition now.

Q. But it was only in 95 per cent. condition in 1923?

A. Well, that is the per cent. I put on it at that time.

Q. Was it in 95 per cent. condition at that time?

A. According to my best judgment it was.

Q. You think it has been improved by work that has been [fol. 3305] done in the way of maintenance?

A. Oh, there is no question about it.

Q. And also by the addition of 2,000 miles additional wire?

A. The whole toll plant of the company has been quite well revamped, slack has been taken up, poles have been reset where they needed it and straightened up, and the guying has been checked over, and the per cent. condition of the property has been materially improved.

Q. I would like to ask you what study you made, if any, of the record of the Ohio Bell Telephone Company in order to determine a basis for estimating the cost of reproducing the cost of right-of-way?

A. I examined records of the cost of right-of-way during the last two or three years. Those records, however, are difficult to relate to the amount of property constructed, for this reason. A very large amount of the right-of-way of this company has been obtained in previous years, and when the new plant is constructed, much of it is constructed in locations where right-of-way had been previously obtained. A study of the record showed that about one per cent. of the cost of property erected in the last two or three years had been expended for right-of-way.

Q. That is new property, where there was no previous right-of-way?

A. No, no, this is property—new construction—well, the figure that I report for the past two or three years is about $78,000, which was slightly less than one per cent. of the property erected at that time which called for right-of-way expenditures, but the fact is that that property, a very large percentage of it, was erected where right-of-way [fol. 3306] had previously been obtained.

Q. How does it call for right-of-way expenditure?

A. Well, they actually did expend, whether it was an

actual expenditure on the books for right-of-way, slightly over $78,000. I think that covered 1922, 1923 and 1924.

Q. Is that the total expenditure of the company for that purpose for those years?

A. So far as I know, yes, it is.

Q. What record did you study to get that record?

A. The construction record.

Q. Not the books of general account, the general account books of the company?

A. Well, it was a statement of the gross and net additions to the plant.

Q. Is that taken from the plant record, plant account of the company?

A. Fixed capital account. Well now, that, expressed as a percentage of these accounts from 241 to 256 inclusive, is about one per cent. Studies apparently of the records of the company here do not cover enough of the plant in new locations, where new right-of-way had to be obtained for new plant, to arrive at a percentage, as they ordinarily do. Now, I have made some studies in other locations where it has been possible to make determination of it. I find that it runs about three per cent. of the cost of the outside plant account, accounts 241 to 256 inclusive.

Q. Where did you make such studies as that?

A. I made them in Mississippi, Tennessee, North Carolina, the New England states and Maryland.

Q. How did you make that study in each of those instances?

A. By studying similar accounts, capital, fixed capital, [fol. 3307] accounts.

Q. On the general books of the company, just as these appear here?

A. Yes, sir. Where it was possible, however, to segregate those expenditures for right-of-way and allocate them back to the cost of the plant that was erected in those locations where the right-of-way was obtained—for which it was obtained.

Q. In those instances you did not take the gross amount of right-of-way expenditures, but you took from that amount an amount that was absolutely related to new construction where right-of-way was being acquired?

A. Yes, where it was possible to ascertain the relation to right-of-way expenditures in new location.

Q. Why wasn't it possible to do that in Ohio?

A. As I stated, this company was formed only four years ago. It was taken over from the Central Union Company, and this company is a merged company, where two companies had previously operated, and, combined, they had secured a very large amount of the right-of-way that they needed as evidenced by the rather small expenditure in the last few years.

Q. Have you checked that expenditure with similar expenditures of other companies?

A. I would state that in my experience about three per cent: of the cost of outside plant accounts is about the normal expenditure for that item.

Q. You mean to say that in the normal set-up of plant account in Bell Associated Companies we will find the right-of-way expense bears a relation of about three per cent. to this outside plant account we are talking about?

A. Yes. It is not confined to Bell Companies. Electric [fol. 3308] Light Companies have the same experience. Independent Telephone Companies have the same experience. Of course, these fluctuate in different states, depending on the laws providing for the requirements of the utility companies to procure right-of-way. My understanding is that in Ohio utility companies get permission of the property holder before structures are erected in front of his property.

Q. Is that peculiar to Ohio?

A. Well, some states have that requirement and others do not, and others are mixed.

Q. Do you know as a matter of fact whether that has been the practice of the Ohio Bell Telephone Company, to get the consent of the owners before they proceed?

A. I made certain inquiries and I found it was.

Q. You have here in your original testimony the statement that you found in general the cost of right-of-way varies from five to fifteen dollars a pole in new locations. Now, that is rather an indefinite statement it seems to me. I just wondered if you could make it a little more direct.

A. No, I cannot, because of the fact that I examined a lot of data that the engineers of the telephone company here had compiled as to recent expenditure for poles erected in new locations, where those figures were obtainable.

Q. Those figures would be the amount that they had

spent for individual jobs rather than an average, wouldn't they? When you say from five to fifteen or twenty dollars, you are not attempting to strike any sort of an average covering all of the poles?

A. No, I would not say that.

Q. But you found from his investigation of data that [fol. 3309] the engineering force had collected that they were expending various amounts ranging from five to fifteen dollars?

A. Yes, any pole set out here might vary from nothing to a hundred dollars. There is nothing fixed about it. It is just a matter of chance as to what it will cost. Here is a fact that I gave considerable weight to when I arrived at that figure in addition to my other experience. The right-of-way of this company as I stated before has been very largely acquired in the past, perhaps even before the merger of the two companies, in fact almost all of it before the merger of the two companies, much of it extending back between 15 and 20 years. Now, the index factor of construction costs related to 1913 or '14 is about 60 per cent. Present day costs are about 55 to 60 per cent. above pre-War costs. And I made an examination of the right-of-way figures on the books of the company. As I recall they had about a million and a quarter dollars as of the date of this appraisal. Well now, a fifty per cent. index factor applied to that would give approximately $1,900,000, which I think is close to the figure I have used.

Q. Is that the way you arrived at that figure?

A. No. I took three per cent. I took the method that I have employed in a number of cases as being normal and indicative of about what those costs run. I have a total of $1,932,037.00, and that is about in line with the index factor for costs of all kinds relating to pre-War costs, and that is the date as to when this right-of-way was obtained, except for this $78,000, that is, that has been acquired since the [fol. 3310] date of the appraisal.

Q. Have you pretty generally used——

A. I mean acquired from 1922 to 1925.

Q. That I understand is the total of expenditures for that purpose since the organization of this company. Is that correct?

A. When was the company organized?

Q. 1921.

A. This covers only 1922.

Q. Now, is this three per cent. the basis upon which you have usually valued the right-of-way in other valuations that you have made?

A. It is one that I have frequently used. I have used the pole method. I have used from three to five dollars a pole. I have used the mile method, so much per mile of pole line. I have used a number of different methods, but I have used this method in a number of appraisals.

Q. Now, in these instances you mentioned awhile ago where you have made specific studies, you were able to base your testimony on the exact records of the books I understand?

A. To a large extent, yes. It is never possible to completely analyze all of the right-of-way accounts. You can only take the expenditures and relate them to property erected in new locations. In no company can you get a complete history of all these accounts that I have ever heard of.

Q. In these cases where you did make a study as you have testified, North Carolina and Massachusetts and Mississippi, and I forget the other states, did you find a three per cent. relation?

A. Yes, I found that it runs about three. Now, it has a range, of course.

Q. Did you find it in excess of three per cent in any of [fol. 3311] these instances?

A. I was just trying to think. It seems to me in one case I found as high as five per cent and as low as two or two and a half. It has a range in there between two and a half and five per cent.

Q. Is there any difference between exchange and toll property as to the relation of the right-of-way expense as to construction costs?

A. I think that varies with the locality. Some municipalities are very strict in regard to the erection of poles or any kind of structure in the streets. They are very rigid in the permission they give to utility companies to cut paving or erect barriers in the streets. Other cities are more lenient. It is one of the most difficult things to determine in the appraisement of a utility property. It is a thing that is

not subject to putting it down to an actual unit cost, like you can the cost of a pole or a thousand feet of cable.

Q. What is the objection from a practical standpoint to taking the relation of the right-of-way account on the books of the company to the book cost as the basis of the estimate of right-of-way?

A. Well, it has no relation to the total.

Q. I mean of the book items to which you do relate it? What is the objection to that method? Adding to what I have stated the additional feature perhaps of applying an index factor to raise it to the present day level of prices with reference to the other?

A. If you do that, I think you have to carry it with the data you have available as to present day costs. If you find that costs are running in excess of that, if you find [fol. 3312] them running as high as four or five dollars a pole, and the results by the method you indicated would only give one dollar or one dollar and fifty cents, I think your method would be inadequate. I think you have it tested out by the recent results.

Q. Where there are no recent results, what would be the objection to it?

A. I don't know. I think in this case where you have these results I would certainly want to check it by recent expenditures.

* * * * * * *

[fol. 3313] Thursday Morning

December 9, 1926, 10:00 o'clock.

And also GEORGE B. WILLIAMS, recalled as a witness for the purposes of cross-examination, continued his testimony as follows:

Cross-examined.

By Mr. McConnaughey:

Q. Mr. Williams, in the course of your examination you were asked to furnish certain material which you were to bring in. You were asked to furnish from the list of the specific estimate reports that you used in your study

of costs on central office equipment those estimates which represented entire new work. Have you that list?

A. Yes, I have. Of the jobs that I gave the ones that were entire new construction were the Columbus-Garfield job, the Alliance Manual equipment and the Washington, Court House Manual Equipment. Now, in that connection I have some further information relative to construction costs on central office subsequent to this list that I gave you that you would be interested in.

Q. You mean that was used in your study?

A. No, they were not used in my study.

Q. Well, I do not just see how it would be interesting to us then.

A. I thought you might be interested in the cost of construction up to the present time or near it.

[fol. 3314] Q. Well, I do not think we care for that.

A. All right.

Q. You were also asked to furnish the tentative material cost that you used of crossarms. Have you that?

A. Yes, I have that. The material cost on the crossarms as used in the company wide unit costs for crossarms, for crossarms alone, that is, exclusive of miscellaneous material, was $1.759.

Q. That was the cost of those average crossarms that you used as your basis?

A. That is right.

Q. What was your figure for accessory materials on crossarms?

A. Three and one half cents for crossarms.

Q. Now, you were also asked to give some information with reference to your labor and material costs on paving?

A. I am sorry that I cannot furnish the information asked for, which was a division between labor and material on paving costs, for the reason that the information that we received from the different cities and the different engineering departments, the different city engineers, did not disclose that information or did not divide it as between labor and material.

Q. Well, as I recall, you did not attempt to build up any independent units for that item, but used what was reported to you by public officials who had done paving?

A. That is right. We got information from 25 or 30 different towns, that is, in a majority of the towns where

we had underground conduit and paving, and out of those towns we used the costs we obtained for Cleveland, Columbus, Toledo, Dayton, Akron and Springfield, as represent-
[fol. 3315] ing the major portion of the major portion of the paving.

Q. How did you use the costs obtained from these various cities? I assume they were not all the same. Or were they all the same?

A. No. There was not a great deal of spread in most of the costs. We weighted them with the amount of construction or the amount of paving in those different cities, so that we got a weighted average unit cost for each type of paving. In that connection I might say, Mr. McConnaughey that we received costs from different cities regarding almost two million square yards of paving.

Q. What was the total yardage that you valued in your inventory?

A. The square yardage in company wide inventory was only about one fourth of that, or about 567,000 square yards. Of course, the reason for that difference is that the cities might very easily pave considerably more street in the course of the year than we would have conduit.

Q. Now, did they give you the prices prevailing in the different cities in the years in which the paving was done?

A. No, no, they did not.

Q. That was the present cost?

A. That was the present cost, yes, the present cost to reproduce new the original paving.

. . . . . .

[fol. 3316] Mr. Burr: In that connection, and as illustrative of what I have in mind, I might ask Mr. Williams where he sits to tell the Commission the date as to which the net additions to the property were last put in evidence by him.

Mr. Williams: June 30th, 1926.

Mr. Burr: Have you made any inquiry to determine the net additions since that date up to any definite date?

Mr. Williams: Yes, from that date up to October 31st
[fol. 3317] this year the net additions amounted to a little over three million dollars, as I recollect.

Mr. Burr: That is, three million dollars in addition to the latest figure you have put into the case here before?

Mr. Williams: Yes, sir.

Mr. Connaughey: Now, Mr. Hagenah will be our first witness.

And thereupon the Ohio Bell Telephone Company rested.

And be it Further Remembered, That the State of Ohio, to maintain the issues on its part to be maintained, offered and introduced in testimony on its behalf, the following evidence towit:

[fol. 3318] WILLIAM J. HAGENAH, called as a witness on behalf of the State of Ohio, being first duly sworn, testified as follows:

Examined by Mr. McConnaughey:

Q. State your name, residence and occupation.

A. William J. Hagenah. Residing in Chicago. I am a Public Utilit- Engineer and analyst by profession, specializing in the making of appraisals, cost analyses, rate studies and financial investigations, covering all classes of public service corporations.

Q. State your experience and qualifications for this work.

A. I have for 23 years been engaged exclusively in the making of corporation investigations along the lines just stated. I am a graduate of the University of Wisconsin.

From 1903 to 1905, I was engaged in railroad rate investigations in Wisconsin, Illinois and Iowa.

From 1905 to 1907, I was Deputy Commissioner of Labor of the State of Wisconsin, having charge of special investigations covering several Public Utility Corporations in that state.

From 1907, the year in which the Wisconsin Public Utility Law was passed, to 1910, I was in charge of the Rate Department of the Wisconsin Railroad Commission.

From 1910 to 1911 I was given a leave of absence from the Wisconsin Commission, to be special valuation engineer and rate analyst for the city of Chicago.

In 1911 I engaged in private practice and have been so engaged continuously to date. During this time I have [fol. 3319] made appraisals, rate studies and financial investigations for all classes of Public Utilities and railroads on behalf of corporations, cities, Public Service Commis-

sions, taxing authorities, civic bodies, banks and estates. I have appeared before nearly every Public Service Commission in the United States and price fixing and regulating bodies of the United States Government and Canada.

I have made appraisals, rate studies and allied kinds of investigations of gas utilities supplying the cities of New York, Buffalo, Atlantic City, Philadelphia and suburban territory, Pittsburgh, Erie, Washington, Charleston, Jacksonville, Miami, Mobile, Cincinnati, Columbus, Dayton, Louisville, Memphis, Indianapolis, Flint, Chicago, East St. Louis, St. Paul Des Moines, Omaha, Tulsa, Butte, Salt Lake City, Seattle, Portland and Los Angeles.

I have made similar investigations covering electric utilities, serving the cities of Washington, D. C., Cleveland, Toronto, Memphis, Nashville, Chattanooga, Louisville, Cincinnati, Evansville, Indianapolis, Gary, Milwaukee, St. Louis, Des Moines, St. Paul, Duluth, Pueblo, Butte, Portland and San Francisco.

I have appraised the Street Railway Systems in the Cities of Chicago, Milwaukee, Washington, Toronto, Akron, Nashville, Evansville, East St. Louis, Grand Rapids, Duluth, Wichita, Portland, Houston.

And large interurban systems, such as the Illinois Traction system, Texas Electric Railway, Michigan Railways Company, United Railway of Michigan, and smaller interurban systems operating in Virginia, Wisconsin, Indiana [fol. 3320] and Illinois.

I have appraised and made rate studies of the water utilities serving the cities of Springfield, Massachusetts, Montreal, Richmond, Indianapolis, Wichita, St. Joseph, Superior, Racine, covering the suburban territory north and east of the city of Chicago, Des Moines and Birmingham.

I have appraised telephone systems on behalf of cities and telephone companies and Public Service Commissions. My first telephone experience away from the Public Service Commission of Wisconsin was the appraisal on behalf of the city of Chicago of the Chicago Telephone Company. On behalf of the city of Wichita, Kansas, I appraised the telephone property there.

I then appraised on behalf of the company the Central Union Telephone Company's property located in the State of Illinois, which appraisal was for the purpose of sale.

I next appraised the Michigan Telephone Company's

property located in the city of Detroit, and then appraised the property of the Cleveland Telephone Company of Cleveland, this state.

My next work was the appraisal of the telephone property in Birmingham.

I just made a state-wide study of the New England Telephone Company's property, located in Vermont, on behalf of the company.

I next appraised the telephone property in the State of North Dakota on behalf of the North Dakota Railroad Commission and the North Dakota Tax Commission.

I was next engaged to appraise all of the telephone prop-
[fol. 3321] erty in Virginia on behalf of the Public Service Commission of Virginia. My next telephone undertaking——

Q. Is that Virginia or West Virginia?

A. West Virginia. My next appraisal undertaking was on behalf of the city of Baltimore, covering the Chesapeake & Potomac Telephone Company property of Baltimore City, which operates throughout the State of Maryland.

I next appraised the telephone property in the State of Virginia.

I was three times engaged by the Union of Canadian Municipalities in a rate investigation covering the Bell Telephone Company of Canada.

And I have also appraised the telephone property of the International Telephone & Telegraph Company, operating throughout the Island of Porto Rico, and the local services and the interurban services of the three largest States of the Republic of Brazil.

Q. Mr. Hagenah, may I interrupt to ask you to state whether in all these cases where you say you were engaged to make appraisals you actual- did make appraisals?

A. I did make appraisals, prepared reports, and practically in every instance, testified, except where the appraisal was for other than rate making before a Public Service Commission. The other cases were practically all court cases or Masters' proceedings.

I have made railroad valuation studies and testified in rate adjustment cases on behalf of the Union Pacific system, the Chicago & Northwestern Railroad, the Virginia Railroad, and the Butte Anaconda & Pacific Railroad.

[fol. 3322] I have represented the Public Service Commis-

sions of Wisconsin, New York, North Dakota, West Virginia, Tennessee and Alabama. I have represented the municipalities or cities of Chicago, Buffalo, Springfield, Massachusetts; Montreal, Baltimore, Pittsburgh, Erie, Cincinnati, Dayton, Akron, Lansing, Wichita. And some of these cities I have represented on three different occasions.

I have represented four of the five largest banks in the city of Chicago, and also banks and bankers in Milwaukee, St. Louis, New York, Philadelphia, Toronto and London; also represented one British Life Insurance Company having extensive public utility investments of its reserves in the United States.

I have appraised other properties besides telephone properties and other than those I referred to in Canada, Mexico, the West Indies and South America.

The aggregate value of the public utility properties covering which I have made appraisal reports, financial studies and rate investigations is in excess of three billion dollars. These investigations were for the purposes of rate making, for purchase and sale, rearrangement of capital structures, adjustment of taxes, condemnation cases and arbitration boards. I have served on a number of arbitration boards, sometimes representing one party and sometimes as Chairman, selected by the other two.

Q. What facilities do you have for making appraisals and performing these functions that you have been engaged in?

A. I have for the last ten years had a staff, ranging from 40 to 60 employees, embracing engineers, certified account-[fol. 3323] ants, and statisticians. We maintain a library in which all catalogues and production records of the leading manufacturers and jobbing houses supplying Public Utilities are kept to date. We are supplied with discount sheets covering quantity purchases. We have copies of large numbers of contracts of holding companies and large individual utilities, and special contracts, covering large single construction undertakings. We maintain a library and it is kept up to date, on all economic developments, movement of commodity prices, wage rates throughout the United States, labor performances in the different departments of public utility construction, and the reports of Federal Reserve Banks and other banks, showing monthly condition of business, in different parts of the United States. We also keep in touch with all of the decisions of the Public

Service Commissions of the United States and the decisions of the various courts pertaining to Public Utilities.

Q. What is your personal relation to all of this work?

A. I am in charge of all of the work and personally take part in every investigation performed by the organization that I have described.

Q. What were the circumstances of your employment in this present investigation?

A. I was requested by the Ohio Public Utilities Commission to come to Columbus for an interview in regard to the work which was to be performed covering the property and records of the Ohio Bell Telephone Company in connection with an application of that company for an increase in rates. I appeared and had an interview with the full commission [fol. 3324] and was requested to submit an outline of what I felt should be undertaken in order to insure a full presentation of all the subjects usually covered in cases of this character by Public Service Commissions and courts. This subject matter, covering correspondence enlarged upon in interviews with the full Commission was approved as to the extent as to which the Commission wished to go, and I was employed to take charge of the investigation along those lines on behalf of the Commission and make full investigation and submit reports covering my findings.

Q. When were you so employed?

A. About the first part of December, 1925.

Q. And you have made this investigation and are ready to make a report?

A. I have, and am ready to report.

Q. Explain first how you organized for this investigation and how it was conducted?

A. The required work naturally divided itself into two sections, first, the accounting undertaking, and, secondly, the engineering investigation.

I organized an Accounting Department for this work by assigning to it three employees. Mr. R. K. Morse, certified public accountant who has been associated with me since 1913, was put in charge, with two assistants.

The engineering work was placed under the immediate supervision of Mr. Victor A. Dorsey, who has been associated with me since 1911. He had twelve assistants in the field and such clerical and stenographic assistance as the material coming into the office made necessary.

The specific subject matters which were discussed with

[fol. 3325] the Commission and on which findings were necessary made this division in the field imperative. The specific subjects to be covered were, first, to ascertain by proper checks the accuracy of the company's inventory. Secondly, I was asked to make an appraisal, showing the reproduction cost of the company's property as of its inventory date that was used and useful in the Public Service. I was asked to report on the extent to which depreciation was present in the property as of the inventory date, and what the reproduction cost was after deducting such depreciation, using as the basis of the appraisal the level of material and labor prices which obtained throughout Ohio as of June 30th, 1925.

I was next asked to find and report to the Commission the true investment of the company in its operating property and what its earnings and operating expenses had been for such a period of years as had a material bearing on the present cost of service.

I was also asked to report to the Commission the proper depreciation requirement by the company.

My attention was directed to certain intercorporate relations which obtained, regarding which testimony would be called for as to the reasonableness of that relationship and its effect on the cost of service to the subscriber in Ohio.

I was also asked to advise the Commission as to what constituted a reasonable rate of return on the company's property under financial and industrial conditions which obtained in 1925.

And I was asked to acquaint myself with the movement of prices in so far as this had a bearing on the probable [fol. 3326] tendency of prices in the immediate future or for such term as the rates involved in this case would be effective.

This required a division of the field work into accounting, research and engineering investigation. The cost of money and movement of wages and prices partook of economic studies, which were conducted entirely from Chicago.

Q. What is the result of that?

A. I have reduced my findings to a series of reports and Exhibits, which I am now ready to have produced.

Q. Do you care personally at this time to make any further statement in reference to your findings?

A. No, except that we are now ready to put in the findings in their logical and orderly way, which I think would call first for the presentation of the accounting studies.

Q. I show you a document which is entitled "Analysis of Accounts of the Ohio Bell Telephone Company for the Public Utilities Commission, 1926," and ask you to state what that is.

A. This is a report covering the investigation of the books and records of the Ohio Bell Telephone Company, both from the standpoint of determining its true investment and the analysis of its operating expenses and revenues. It embraces a history of the Ohio Bell Telephone Company, beginning with the first telephone development in the State of Ohio in Cleveland, bringing it down to June 30, 1925. The history covers the enlargement of the company through growth and by merger and consolidation with other Bell interests and independent telephone companies. There is also an analysis of the true book cost of the company's property to the inventory date, and the details of its earn-
[fol. 3327] ings and operating expenses, as shown by the books, according to the classification of accounts prescribed by the Interstate Commerce Commission.

Q. By whom was this prepared?

A. The report was prepared by me and under my immediate directions. All of the detail work on the books of the company having been performed by Mr. Morse, the certified accountant whose name I have mentioned a short time ago, his results were from time to time brought to my attention in conference with him and his assistants in Cleveland. The report was finally prepared by me, with him assisting, in the city of Chicago. The report is dated November 20th, 1926 and signed by me personally.

Mr. McConnaughey: We wish to offer this in evidence as Morse Exhibit No. 1.

The Witness: My attention is called to the fact that the report is complete to the end of the calendar year, 1925, instead of to June 30th, 1925. If that date will be substituted in my previous statement, it will be correct.

Mr. Burr: May it be understood that if admitted the Exhibit is admitted subject to our objections for relevancy, competency and materiality, which we cannot determine at this time, not yet having seen the Exhibit.

Chairman Marshall: Certainly.

Mr. McConnaughey: I suppose you could make any argument of that kind on the Exhibit.

And thereupon the document above referred to was offered and admitted in evidence on behalf of the State of [fol. 3328] Ohio, subject to the objection and exception of the Ohio Bell Telephone Company, above noted, and is herewith submitted, marked Morse Exhibit No. 1, and made a part hereof.

And also ROBERT K. MORSE, called as a witness on behalf of the State of Ohio, being first duly sworn, testified as follows:

Examined by Mr. McConnaughey.

Q. State your name, residence and occupation.

A. Robert K. Morse, certified public accountant, Illinois, residence, Chicago.

Q. With whom are you connected in the practice of your profession?

A. I have been since 1913 in charge of the accounting work in Mr. Hagenah's office and have participated in practically all of the large accounting investigations that have been carried on by him.

Q. You heard the recital by Mr. Hagenah of the enterprises and investigations in which he had been engaged. What connection have you had with those in your capacity as an accountant?

A. There is a large number of those in which there was no accounting work done. But I have participated and made analyses of accounts in telephone companies in the Michigan Telephone Company, in the Detroit properties, the Cleveland Telephone Company, the New England Telephone & Telegraph Company, the Northwestern Telephone Exchange——

Q. What is that?

A. That is the North Dakota properties to which he re- [fol. 3329] ferred. And I have also participated in the investigation of the New York Telephone Company, which is not work that Mr. Hagenah carried on, the state-wide case, in New York City and Buffalo and Syracuse. I have also worked on and have charge of the accounting investigation of the Chesapeake & Potomac Company, to which

Mr. Hagenah referred. I made analyses of the accounts in West Virginia and in Baltimore.

Q. Including the State of Maryland.

A. The Baltimore matter covered the State of Maryland.

Q. What in general are your qualifications for this class of work, stating your education and experience?

A. I am a graduate of Columbia University in the city of New York. After graduation, for nine years, I was assistant statistician in charge of statistical accounting in the Equitable Life Assurance Society. I left New York in 1910 and came to Chicago to join the Bureau of Public Efficiency, which investigated accounts and governmental practices in the political organization and the government of the city of Chicago. In 1912 I went up for examination before the University of Illinois for the degree of certified public accountant and in 1913 I joined Mr. Hagenah's staff, and I have been with him practically ever since, for the last thirteen years.

Q. What accounting work and investigations have you had to do with aside from the telephone investigation that you have already mentioned?

A. The Street Railway properties in Washington.

Q. That is Washington, D. C.?

A. Washington, D. C.; in Springfield, Illinois, Rockford, [fol. 3330] Milwaukee, East St. Louis, Chicago, Duluth, and the traction properties in Brazil, in the cities of Rio de Janiero and Sao Paula.

I have also participated in investigations of electric and power properties in Montana, at Butte, in Duluth, in Des Moines, in Dayton, Superior, Birmingham, Alabama, and in connection with the case of San Francisco against the Great Western Power Company, and the Pacific Gas & Electric Company.

I have been in gas company investigations in Chicago and suburban territory, in Galesburg, Dayton, Columbus, Lansing, Tulsa, Oklahoma, and various other places which I have not covered here. In addition to water companies in Richmond, Montreal, Superior, Indianapolis, Erie, Pennsylvania. In all of these investigations I had charge of the accounting work under Mr. Hagenah's direction.

Q. State whether or not you are familiar with the accounting system prescribed by the Interstate Commerce Commission and approved by the Public Utilities Commission of Ohio, applying to telephone properties.

A. I am familiar with that classification, as it is the one that is used by all of the large telephone properties I have ever investigated.

Q. What did you have to do with the investigations of the accounts of the Ohio Bell Telephone Company in this present investigation?

A. We had two objects in view. The first was to ascertain as near as possible the true investment, original cost, of the present properties of the Ohio Bell Telephone Com-
[fol. 3331] pany. And, secondly, the revenues and expenses and net income of that property. In order to do this I had, as Mr. Hagenah stated, two assistants assigned to help in the work that was carried out in the general offices of the company in Cleveland, where all of the records that the company was able to get together are now filed in their records vault. These records cover practically all of the companies that are now consolidated into and form a part of the present organization.

Q. Were you able to determine from that investigation the history of this company so far as its organization and various mergers and consolidations and purchases of other properties are concerned, so as to bring about the present situation?

A. We were able to locate original records of practically all the companies which entered into the various consolidations leading up to the present company. Of course, over a period of over 35 years there are some of the companies whose original construction records are lost, and some books which the company apparently was unable to obtain from the companies which they purchased or consolidated. Those records, of course, were not seen, but from the records that were available we have made an analysis and set up what we believe to be the approximate original cost of the present property.

Q. Now, will you state first the history of this company, telling how it came to be the property that it is today?

A. The present Ohio Bell Telephone Company is a consolidation in 1921 of two companies, one known as the Ohio Bell Telephone Company, and the other, the Ohio State Telephone Company.

[fol. 3332] The Ohio Bell Telephone Company up to September 20th, 1921, was originally the Cleveland Telephone Company, having changed its name from the Cleveland

Telephone Company to the Ohio Bell Telephone Company in October, 1920.

The Ohio State Telephone Company was a consolidation of fifteen independent telephone companies in July, 1914, and subsequently acquired other telephone properties prior to the date of the consolidation with the Ohio Bell Telephone Company in 1921.

Subsequent to the change of name of the Cleveland Telephone Company to the Ohio Bell Telephone Company, they purchased all of the properties of the Central Union Telephone Company located in the State of Ohio, and in 1921 purchased all of the properties of the Chesapeake & Potomac Telephone Company, of West Virginia, located in the State of Ohio. So that the present company covers practically the entire State of Ohio, with the exception of the territory immediately surrounding Cincinnati, that is, the city of Cincinnati.

Q. When was the Cleveland Telephone Company organized?

A. The Cleveland Telephone Company was organized in 1880, is my impression. The Cleveland Telephone Company was incorporated January 24th, 1880 and continued to operate under that name, as I stated, until October, 1920, when it became the Ohio Bell Telephone Company.

Q. What were the constituent companies that were consolidated to make up the Ohio State Telephone Company?

A. Do you want a list of the companies?

[fol. 3333] Q. Yes, and the dates of their organization.

A. There were fifteen companies that comprised the Ohio State Telephone Company. The names are as follows:

The Citizens Telephone & Message Company, organized June 7th, 1895; The Columbiana County Telephone Company, June 20th, 1899; The Columbus Citizens Telephone Company, December 23rd, 1898; The Cuyahoga Telephone Company, September 13th, 1898; The Findlay Home Telephone Company, October 14th, 1899; The Home Telephone Company, of Dayton, March 27th, 1899; The Lancaster Telephone Company, October 27th, 1900; The London Home Telephone Company——

Mr. Postle: Just a moment—1903—no, I beg your pardon.

The Witness: London Home Telephone Company, April

8th, 1903; The Massillon Telephone Company, September 12th, 1900; The Stark County Telephone Company, August 31st, 1900; The Toledo Home Telephone Company, February 25th, 1901; The United States Telephone Company, August 23rd, 1898; Washington Home Telephone Company, January 29th, 1902; Youngstown Telephone Company, May 16th, 1896; and the Zanesville Telephone & Telegraph Company, March 9th, 1899.

Q. What properties did the Ohio State Company acquire by purchase between the time of its organization and the time of its merger with the Ohio Bell Company in 1921? [fol. 3334] A. We were able to find records of seven companies that were purchased between the date of the organization of the Ohio State Telephone Company in 1914, and the merger with the Ohio Bell in 1921. Those companies are:

The Akron Peoples Telephone Company, acquired February 28th, 1915; The Holland Home Telephone Company, acquired December 31st, 1917; The Northwestern Toll Line Company, acquired December 31st, 1917; And four companies that were acquired on July 31st, 1918.

The Nelsonville & Murray Home Telephone Company, the Citizens Telephone Company of Berea, the Northern Ohio Telephone Company, and the Portage County Telephone Company.

There were also a number of companies purchased by the Consolidated Ohio Bell Telephone Company subsequent to 1921. A list of those and the dates of their acquisition is as follows:

The Middletown Telephone Company, November 20, 1921; The Sandusky Home Telephone Company, January 31st, 1922; The Springfield-Xenia Telephone Company, September 30th, 1922; The Coshocton Telephone Company, November 30th, 1922; The Franklin County Telephone Company, December 31st, 1922; The Gallia Telephone Company, December 31st, 1922; The Montgomery County Telephone Company, December 31st, 1923.

[fol. 3335] Commissioner Maullar: What was the date of the Middletown Telephone Company?

The Witness: November 30th, 1921.

Commissioner Maullar: You said 20th before.

The Witness: I have already mentioned the Ohio Bell Company took over the Ohio property of the Chesapeake

& Potomac Telephone Company of West Virginia, which was taken over as of December 31st, 1921.

Q. Will you state briefly the financial arrangements connected with the purchase of the Central Union property in Ohio by the Ohio Bell Telephone Company?

A. The Ohio Bell Telephone Company paid $27,941,-851.24 in cash, and assumed mortgages amounting to $210,-000.00 for the entire property of the Central Union Telephone Company located in the State of Ohio. Included in this amount were miscellaneous investments, materials and supplies and current assets and liabilities of $1,625,-135.01. So that the plant and equipment taken over by the Ohio Bell Telephone Company from the Central Union Company was $26,526,716.23.

Q. Now, will you in like manner state the terms of the consolidation of the Ohio State and the Ohio Bell Telephone Companies in 1921?

A. The Ohio Bell Telephone Company and the Ohio State Telephone Company consolidated to form the present The Ohio Bell Telephone Company as of September 21st, 1921. The capital stocks and outstanding funded debt of the Ohio Bell Telephone Company at September 21, 1921, amounted to $44,540,000.00, made up of $25,000,-000.00 in capital stock, $170,000.00 real estate mortgages, [fol. 3336] and $9,650,000.00 debenture bonds, and advances from the American Telephone & Telegraph Company, amounting to $9,720,000.00.

The Ohio State Telephone Company had outstanding securities at that same time amounting to $26,756,286.28, made up of common stock, $5,205,475.00; preferred stock, $6,-972,225.00; underlying bonds outstanding, $6,743,200.00; and reacquired in the treasury or in the sinking fund, $878,500.00. Their consolidated and refunding bonds, Series A, outstanding, amounted to $53,000.00, and the Series B, outstanding, $4,886,898.94, and Series B, bonds in the sinking fund, or reacquired, were $93,987.34. The Series B bonds were the bonds which were issued at the time of the original organization of the Ohio State Telephone Company in 1914, took up the values of the outstanding securities that were not held by the United States Telephone Company or were not held by the public—how did I state that?—the bonds issued at the time of the or-

ganization of the Ohio State Telephone Company for the securities of the underlying companies. Then in addition to the consolidated refunding bonds already mentioned, there were four year convertible debentures, amounting to $1,300,000.00, and Serial convertible debentures amounting to $623,000.00.

The total outstanding securities for the two companies at the date of organization was $71,296,286.28.

Under the consolidation agreement this old capitalization was replaced with a new capitalization of $69,344,233.16, a reduction of $1,952,053.12. This latter amount was credited to the corporate surplus account of the Ohio Bell [fol. 3337] Telephone Company on September 21st, 1921. The new securities issued, amounting to $69,344,233.16, were made up of common stock, $25,000,000.00, exchanged at par for the common stock of the Ohio Bell Telephone Company, the old company——

Mr. Burr: Are you correct about that?

The Witness: The common stock of the Ohio Bell Telephone Company, exchanged for common stock of the Ohio Bell Telephone Company, new company, $25,000,000.00.

For the common stock of the Ohio State Telephone Company was exchanged at 62½ per cent for preferred stock of the new company, amounting to $3,253,421.88.

The preferred stock of the Ohio State Telephone Company was exchanged at par for preferred stock of the new company, $6,972,225.00.

The funded debt of the Ohio Bell Telephone Company, the old company, amounting to $19,540,000.00, was assumed by the new company, and the outstanding funded debt of the Ohio State Telephone Company, amounting to $14,578,586.28, was also assumed by the new company, so that the total new capitalization reached $69,344,233.16.

Q. Mr. Morse, may I ask you when you refer to Hagenah Exhibit 1 for any tables or calculations, that you refer in your testimony to the page, so that it can be identified and referred to later?

A. Yes. The data concerning the capitalization of the Ohio Bell Telephone Company and the Ohio State Telephone Company prior to their consolidation as the Ohio Bell Telephone Company is found on page 2 of Hagenah Exhibit 1, and was prepared by me personally from the

[fol. 3338] books and records of the company as of the respective dates.

The data regarding the purchase of the Central Union Telephone Company appears on page 3 of the same Exhibit.

And the list of companies that has been mentioned as constituting the Ohio Bell Telephone Company, purchased by that company after 1914, and also purchased by the present company after 1921, is found on pages 4 and 5.

Q. What was the condition of the plant account of these two companies at the time of the consolidation in 1921?

A. The plant and asset account and sundry liabilities of the two companies were merged at respective book values. On September 21st, 1921, the property and plant account of the Ohio Bell Telephone Company amounted to $49,056,111.24, and it was taken into the accounts of the new company at that date, page 3 of Hagenah Exhibit 1.

The Ohio State Telephone Company on September 21st, 1921 had a book value of property and plant amounting to $28,783,821.17, and it was taken into the accounts of the new company at that amount.

So that the Ohio Bell Telephone Company, the present company, began business on September 21st, 1921, with a book value of property and plant account amounting to $77,839,932.41, as shown on page 4 of Hagenah's Exhibit 1.

Since that date, namely, September 21st, 1921, up to the close of the calendar year, 1925, the property and plant account has increased to $107,704,005.35, at which amount or figure it stood on the date of our investigation.

Q. What are the tables shown on pages 6 and 7 of [fol. 3339] Hagenah Exhibit 1?

A. The tables on pages 6 and 7 are comparative balance sheets of the present company as of the date of organization in 1921 and as of the end of the calendar year 1925, with the respective increases and decreases in the items.

Page 6 shows the asset account as of September 21st, 1921, and December 31st, 1925, and page 7 contains the statement of liabilities as of the same dates, with their increases or decreases.

It shows that the fixed capital account has increased during the four years and three months, three and one-third months, by $29,864,072.94, and during that same period the capital stock has increased $38,000,000.00, and the long term decreased $16,090,978.34.

Q. Will you explain the item on page 7 in the column giving the liabilities as of September 21st, 1921, the item called "Stock Liability for Conversion;" what does that represent?

A. The item represents the amount of capital stock which was held subject to conversion according to the agreement already mentioned, that is, that the preferred stock of the Ohio State Telephone Company was exchanged for preferred stock of the new company, and the common stock of the Ohio State Telephone Company was exchanged at 62½ per cent of par for preferred stock in the new company.

Mr. Burr: I do not want to unnecessarily interrupt the witness, but inasmuch as he is testifying now with respect to the Exhibit, to which we formerly referred, let it be understood that his testimony is taken subject to my objec-
[fol. 3340] tion, all of it.

Mr. McConnaughey: Yes. I understand, Mr. Burr, that that sort of objection means that you reserve the right to make an argument at the proper time with reference to the propriety of any of the evidence, propriety and relevancy of any of the evidence introduced.

Mr. Burr: It comes to that in the end, with this qualification, however, that here is a voluminous Exhibit, filled with figures, as to which the witness is now testifying. We have not seen it before this mornng, and rather than interpose an objection and exception to each question and have the Commission take the objection under advisement, we would like to have it understood that we have a general objection to all of the testimony, which the Commission will take under advisement.

Mr. McConnaughey: I think it is about the same thing that I stated.

Q. Had you completed your explanation?

A. This exchange was not, of course, completed on any single day, and the amount of the stock that had not been converted from one company into the stock of the other company is represented by the item of the stock liability for conversion.

Q. Now, what does this figure of $107,704,005.35, which is designated as total fixed capital, in the column under date of December 31, 1925, on page 6, represent?

A. That represents the book value of the property and plant account of the Ohio State Telephone Company on December 31st, 1925. It is the accumulated figure, built [fol. 3341] up from the net charges to the property and plant account over the period of years through which the company and the subsidiary companies have been building up their accounts.

Q. You used the words "Ohio State Telephone Company," Mr. Burr suggests.

A. I mean the Ohio Bell Telephone Company. It represents, of course, a book figure, and if there is any inflation in the property and plant account, it would be included in that total.

Q. Now, in your investigation of the accounts did you find any adjustments that should be made in that account in order that it might represent more accurately the cost of the property?

A. Yes. In going over the records of the present company, we found that there were a number of places where charges had been made to the property and plant account that in our opinion did not represent physical property. For instance, there were differences of securities taken over or cancelled or issued and cancelled, and there were differences in appraisal figures that were charged to property account. On page 9 there is a summary table of the charges and credits to the property account, not representing cost of physical property. The first group down to the total of $3,424,000.00 represents items that do not appear to be proper charges to property and plant account on the books of the Ohio State Telephone and its constituent companies. The credit item of $127,069.54, near the end of the table, represents credits to the property and plant accounts, which in our opinion should be reversed. The intangible capital of $40,000.00, next to the last line, ap-[fol. 3342] pears on the books of the Ohio Bell Telephone Company and covers certain charges for abandoned property.

Mr. Burr: May I ask a question?

Mr. McConnaughey: Yes.

Mr. Burr: In the table which you are now discussing, does everything down to and including the $127,069.54 in red have reference to the Ohio State Telephone Company's accounts?

The Witness: No. No, there are—there is shown later on, in later tables, the item of intengible capital and surplus and excess of par value of stocks and bonds over cost, contains figures relative to stocks purchased after the consolidation in 1921.

Mr. Burr: The $3,424,305.49 shown on page 9 at the middle of the page, does that have reference solely to the Ohio State Telephone Company?

The Witness: That has reference solely to the Ohio State Telephone Company. And then the last item in the table, $104,209.10, represents an increase in the book value of the property and plant account of the company, of the Cleveland Telephone Company, from an appraisal made in 1912.

Mr. Burr: Not to interrupt you unnecessarily, but to try to get my understanding clear on the item, referring again to the table on page 9, do not all of the figures, including that $127,069.54 in red, have reference to the figures as shown on the books of the Ohio State Company and on the books of other companies, whose property the Ohio Bell Company purchased.

The Witness: No part of the items making up this $127,-[fol. 3343] 000.00 credit appears on the books of companies purchased by the Ohio Bell Telephone Company after 1921 and also on the books of some companies that were purchased by the Ohio State prior to 1921. So it is both companies together.

Mr. Burr: That is right. Thank you.

The Witness: The total amount of these charges and credits to the property and plant account which do not appear in red, the cost of physical property, was $3,442,-062.28, as shown in the table on page 9. If that amount is taken away from the present book value or the book value as of December 31st, 1925, which amounted to $107,704,-005.35, it leaves a remainder of $104,261,943.07, which is, as close as can be approximated, represents the original cost of the property of the present company.

Q. As shown how?

A. As shown by its books, less these items which I have mentioned.

Q. Does Hagenah Exhibit 1 contain a more detailed table of these adjustments which are summarized on page 9?

A. It does.

Q. On page 11?

A. On page 11 there is a table showing the figures which have already been testified to in more condensed form.

The aggregate deduction of $3,442,062.28, taken from the present book value of $107,704,005.35, leaves an estimated original cost of $104,261,943.07. I might state that in the appendix to the report there is also a table giving in still further detail some of these adjustments.

Q. Now, Mr. Morse, before referring to those tables, let [fol. 3344] me ask you if the further details that you refer to now are not the details with reference to specific items that are carried out on separate sheets?

A. They are principally with respect to certain of the items that appear in this table.

Q. I would like to ask you to refer to pages 11 and 12 and discuss the various items, explaining them, and in that connection you may refer to these supplementary sheets for the further detail, if it will be a little more orderly. As of what date does the figure $107,704,005.35 show the book value of the property of the Ohio Bell Telephone Company?

A. December 31st, 1925.

Q. And the adjusted of $104,261,943.07 is as of what date?

A. As of the same date, December 31st, 1925.

Q. Now, will you discuss those items in an explanatory way so that we can see what they are more definitely?

A. In the table on page 11, the first item of $107,704,-005.35 represents the book value of the property plant account of the Ohio Bell Telephone Company on December 31st, 1925. An analysis of the accounts of the books of the various constituent companies of the Ohio State Telephone Company indicated that there were certain charges that did not represent property and plant, physical property. On the books of the Citizens Telephone Company——

Q. Citizens Telephone & Message Company?

A. Citizens Telephone & Message Company. There was an aggregate charge of $2,536.26, under the description of interest and discount on bonds and stocks. That item is shown on the table on pages 61 and 62, where an analysis is given of the property and account of the Citizens Tele-[fol. 3345] phone & Message Company. The item is shown in the last column on page 62, under the heading, "Losses on Bonds Sold to Reserve Construction Company, $900.00, and Preferred Stock Discount, $1,636.26," a total of $2,536.26.

The credit item of $200.00 of the Columbus Citizens Telephone Company appears in like manner in the table on pages 65 and 66. The last item on page 66 under the heading discount on bonds, credit item of $200.00. That also was obtained from an analysis of the books and records of the Columbus Citizens Telephone Company, as set forth in the table on pages 65 and 66, by years, from the beginning of the company in 1899, to the date when the property was merged with the other companies to form the Ohio State Telephone Company.

The item of $456,357.97 for the Cuyahoga Telephone Company appears in the table on pages 67 and 68 in two amounts; interest on bonds, $1,662.50; discount on preferred stock, $454,695.47.00. That table on pages 67 and 68 was prepared from the books of the Cuyahoga Telephone Company, and shows the property and plant account from 1899, when the books were opened, to July 23rd, 1914, when the books were closed.

Q. Why was the item interest on bonds charged off?

A. It is a proper charge against income rather than a charge against property and plant.

The item of $2,323.79 of the Findlay Home Telephone Company appears in the table on pages 69 and 70, which contains an analysis of the property and plant account of the Findlay Home Telephone Company from the opening entry of the books in November, 1900 to the close of the [fol. 3346] books in July, 1914, when it consolidated to form the Ohio State Telephone Company. That item appears as an item, discount on bonds and stocks, $2,323.79.

The Lancaster Telephone Company, $362.54. That item appears in the table on pages 72 and 73, which table contains an analysis of property and plant account of the Lancaster Telephone Company by years from its opening entry in March, 1901 to the close of business on July 23rd, 1914, the date of consolidation to form the Ohio State. This item of $362.54 represents discount on preferred stock.

The Massillon Telephone Company, $13,775.19, appears in the table covering the analysis of the property and plant account of the Massillon Telephone Company by years from January 1st, 1901 to July 23rd, 1914, pages 75 and 76 of Mr. Hagenah's Exhibit. This item of $13,775.19 represents discount on stocks and bonds and was charged into the property and plant account.

The item of $18,178.29 of the Stark County Telephone

Company appears as the last item on the table on pages 77 and 78, under the caption, discount on stocks and bonds.

The $56,477.50 for the Toledo Home Telephone Company appears in two items in the table on pages 79 and 80, which table covers the analysis of the property and plant account of the Toledo Home Telephone Company by years from December, 1902 to July, 1914. These two items are interest on bonds, amounting to $15,000.00, and discount on stocks and bonds, amounting to $41,477.50. Both of these items are properly income charges rather than property charges.

[fol. 3347] The item of $85,780.00 for the United States Telephone Company appears in the table on pages 81 and 82. The two items under the caption, discount on preferred stock, $42,280.00, and discount on bonds, $43,500.00, make up the amount of $85,780.00. This table on pages 81 and 82 covers the analysis of property and plant account of the United States Telephone Company by years from July, 1900 to July, 1914.

The $15,743.79 on the books of the Youngstown Telephone Company represent interest that was charged to the property and plant account in 1904.

The total of those charges, all of which were for interest and discount on bonds and stocks, amounted to $651,335.33.

There is another classification of items that apparently were not proper charges to the cost of physical property found on the books of the Citizens Telephone & Message Company and the Zanesville Telephone & Telegraph Company, through the adjustment of stock subscriptions, balances left in the subscription accounts, which were marked off against the property and plant account.

The item of $303.63 appears in the table covering the property and plant account analysis of the Citizens Telephone & Message Company on pages 61 and 62.

And the item of $7,278.63 of the Zanesville Telephone & Telegraph Company appears in the analysis of the property and plant account of that company on pages 86 and 87. The total of those two amounts is $6,975.00.

The next item in the table on page 11 charges to property and plant account not representing the cost of physical [fol. 3348] property, is the switchboard reconstruction cost, this item of $202,293.82, which appears on the books of the Cuyahoga Telephone Company, and apparently no credit

had been made to the property and plant account for any switchboard taken out. The charge of reconstruction would therefore be in the nature of duplication, and it was eliminated for that reason. That item appears in the table covering the property and plant account analysis of the Cuyahoga Telephone Company on pages 67 and 68 of the Exhibit.

The next item is an item of loss on property sold, the Toledo Home Telephone Company. That charge was made on their books as shown on pages 79 and 80 in the year 1904, and from the nature of the charge, could hardly represent physical property. It would appear that the loss on property had been charged to the property and plant account, leaving only the net sale price as the credit to the property and plant account, whereas, when property is sold, the entire cost should have been credited.

Commission on loan, the United States Telephone Company, $6,000.00, appears in the analysis of the property and plant account of the United States Telephone Company on pages 81 and 82 and would appear to be more in the nature of a financing charge of the United States Telephone Company, rather than a charge to property and plant account, and would not appear to represent physical property.

Franchises and good will appear on the books of the Home Telephone Company of Dayton and the Toledo Home Telephone Company in the amounts shown, $646,000.00 for the Home Telephone Company of Dayton, and $25,000.00 [fol. 3349] for the Toledo Home Telephone Company. When the property and plant account of the Ohio State Telephone Company was distributed in 1921 over the classified property and plant accounts, there was no item charged to franchises. It would be logical to suppose therefore that these charges for franchises and good will did not represent physical property at the time they were made, if they did not represent intangible property of that character at the time they were distributed on the books of the present company. They were simply left in the total that was distributed over classified physical property accounts and have been eliminated here, because they apparently do not represent physical property.

Q. Where is the Home Telephone Company item shown a supporting table?

A. The Home Telephone Company, the item of $64

000.00 to the Home Telephone Company, appears in the table on page 71, which contains an analysis of the property and plant account of the Home Telephone Company for the year 1913 and six and one half months in 1914. The books of that company were missing. That is one of the companies that the present company was unable to obtain records from owing to their destruction,

The item of $25,000 of the Toledo Home Telephone Company appears in the analysis of the property and plant account of that shown on pages 79 and 80. The item of $1,232,745.99, credited to the property and plant account of the Ohio Bell Telephone Company, represents accumulated surpluses of the constituent companies of the Ohio State Telephone Company at the date of their consolidation in [fol. 3350] 1914, less the amount that was held out and carried over on the books of the Ohio State Telephone Company as its surplus account. On the table on pages 55 and 56 the analysis or the details of this item by companies are given.

Q. Just discuss that a little more in detail, Mr. Morse.

A. Which table do you mean?

Q. That item of $1,232,745.99.

A. The item of $1,232,745.99 represents the surplus items of the various fifteen companies which entered into the consolidation to form the Ohio State Telephone Company in 1914, the amounts of which are given on pages 55 and 56 as follows:

The surplus of the Citizens Telephone & Message Company was a deficit.

Mr. Burr: Do you know where that Citizens Company was located? It is the only one with which I am not familiar.

The Witness: Fostoria. A deficit of $13,583.65; The Columbiana Telephone Company had a surplus of $81,370.95; The Columbus Citizens Telephone Company had a surplus of $130,625.89; The Cuyahoga Telephone Company, a surplus of $99,176.29. The Findlay Home Telephone Company had a deficit of $369.24; and a deficit also on the books of the Home Telephone Company of Dayton, amounting to $2,888.38; The Lancaster Telephone Company, a surplus of $28,602.18; The London Home Telephone Company, a surplus of $4,820.54; The Massillon Telephone Company, a surplus of $21,909.15; The Stark Telephone Company, a surplus of $240,478.19.

Mr. Burr: What do the green figures mean?

[fol. 3351] The Witness: They are simply sub-totals of that group.

The Toledo Home Telephone Company shows a surplus of $661,801.36; The United States Telephone Company, a surplus of $172,567.19; Washington Home Telephone Company, surplus of $24,998.41; Youngstown Telephone Company, a surplus of $107,043.71; And the Zanesville Telephone & Telegraph Company, a surplus of $26,093.40.

These items were accumulated, and from the total $350,000.00 was set aside as surplus to open the books of the Ohio State Telephone Company, and the balance of $1,232,745.99 was credited to the property and plant account. The credit of surplus item, surplus to the property and plant account, has no effect on the original cost of the property itself, although it, of course, has an effect on the transfer between the two companies, but it has no effect on the actual cost of the property, and for that purpose the credit which appears on the books has been reversed in this study on page 11, so as to put that back into the property and plant account in our determination of the original cost of the property.

And thereupon a recess was had until 1:30 o'clock P. M. of same day (Thursday, December 9, 1926).

[fol. 3352] Afternoon Session

Thursday, December 9, 1926.

And also ROBERT K. MORSE, resuming the stand for further examination in chief, having been heretofore duly sworn, continued his testimony as follows:

Examined by Mr. McConnaughey:

Q. Had you completed your discussion of the credit item of $1,232,745.99?

A. I had finished that; yes, sir.

Q. Then resume with the next item.

A. The next item in the table on page 11 is entitled "Sundry Charges and Credits to Property Account on Consolidation; Constituent Companies of The Ohio State Telephone Company, $1,278,089.20".

This item is made up of a number of adjustments which

are listed in detail in that small table at the top of page 14.

The items making up the $1,278,000 are, Exchange of stocks, $306,430.88; Miscellaneous adjustments, $344,912.64; Reserves, $621,757.40; Revenue and expenses, credit, $46,511.84; Interest, dividends and so forth, $51,500.12.

This item of $306,430.88, entitled "Exchange of stocks" represents the net increase in the securities issued at the [fol. 3353] date of the consolidation of the fifteen companies to form The Ohio State Telephone Company over the amount of the stocks and securities that were outstanding on the books of the constituent companies.

In the table on page 14 of Mr. Hagenah's exhibit, at the middle of the page, it shows the outstanding securities of the various companies listed as common stock, preferred stock, and first mortgage bonds.

The second group shows "Securities Inter-Company Held and Cancelled", divided among the three groups of common stock, preferred stock and first mortgage bonds.

The fourth group in that table is entitled "Securities assumed".

The last group shows "Securities Issued", divided among common stock, preferred stock, and Series-B bonds.

The purpose of this table was to show the increase in securities that were issued in the new company over securities of the old company.

The table on page 14 represents the total of $303,359.77, by deducting from the outstanding securities of the old company the amount cancelled, and deducting from the total of the securities issued and assumed the balance of outstanding securities after deducting the amount cancelled. Then to that——

Q. Mr. Morse, I do not believe that that calculation appears any place in this exhibit, does it?

A. It does not; no, sir.

[fol. 3354] Q. Well, will you state it, giving the figures, where they are derived and how they are derived?

A. Yes, sir. The outstanding securities——

Q. By "outstanding securities" you mean the securities outstanding issued by these several companies before the consolidation?

A. Yes, sir; they were the capital securities of the constituent companies of The Ohio State Telephone Company.

The total common stock, divided among the fifteen companies totalled $8,726,500.

Preferred stock, $4,239,950, and First Mortgage Bonds of $8,429,500, Total of $21,395,950.

The securities Inter-company held and cancelled were, Common Stock, $1,429,430.88; Preferred stock, $287,450.00; First Mortgage Bonds, $369,300.00. A total of $2,086,180.88.

Q. Now, Just what do you mean by the title there "Securities inter-company held and cancelled"?

A. A number of the companies listed on the left side of that page were controlled in whole or in part by The United States Telephone Company which was a sort of holding company, as well as a toll operating company—long lines operating company, for the independent telephone companies.

In the consolidation the stocks and bonds held by The United States Company were cancelled as inter-company transactions.

[fol. 3355] There were some other stocks I believe held by The London Home Company, which were also included and cancelled in the same transaction.

After deducting inter-company held securities from the total outstanding securities there were left net outstanding securities of $19,309,769.12.

In the consolidation The Ohio State Telephone Company assumed first mortgage bonds of the underlying companies amounting to $8,060,200.

They issued in exchange for the common and preferred stocks of the constituent companies $5,205,475 in common stock, $4,847,325 in preferred stock, and $1,500,128.89 of Series-B bonds.

The total of the securities assumed and the securities issued was $19,613,128.89, or $303,359.77 more than the net outstanding securities of the constituent companies.

In addition to that $303,359.77, The Ohio State Telephone Company issued $3,071.11 in its preferred stock and Series-B bonds and charged it up to property account, making a total charge to property account in connection with the exchange of securities of $306,430.88, as shown in the first item at the head of page 14.

Q. Is that a single item charged to the Property Account, or is that a net result of——.

A. That is the net result of this exchange of stocks.

Q. That is there is that much more than should be charged to capital account because of this transaction, ac-
[fol. 3356] cording to your figures?

A. Yes, sir; it was charged in there to off-set the par value of the securities issued, being the difference between the securities cancelled and the securities actually issued.

Q. Now just to clarify the table on page 14 a little bit, where, under the heading of "Securities Issued," the stock, common and preferred and Series-B bonds listed there are placed opposite the name of a company, taking for instance the first item opposite the name "Citizens Telephone and Message Company" under "Series-B Bonds", is the amount $1141.20; just what does that mean?

A. In the consolidation, or at the time of the consolidation, the total outstanding securities of The Citizens Telephone and Message Company were $50,000 in common stock, $7700.00 in preferred stock, and $50,000 in first mortgage bonds.

Of the common stock $41,000 was inter-company held, leaving a balance of $9,000 of the common stock not inter-company held.

Of the preferred stock, $7700.00 or the entire outstanding issue, was inter-company held.

Of the first mortgage bonds, amounting to $50,000, $58,-500.00 were inter-company held and cancelled.

The Ohio State Company, therefore, assumed the outstanding bonds which amounted to $11,500.00, being the difference between the $50,000 actually issued and the $38,-500 inter-company held.

They paid for the balance of the common stock not inter-
[fol. 3357] company held $12.68 per share in Series-B bonds.

As shown in the total at the top of page 15, there were $9,000.00 in common stock outstanding at $12.68 a share, which makes a total Series-B bond issue for the common stock of The Citizens Telephone and Message Company amounting to $1141.20.

In the Columbiana County Telephone Company there was $300,000 common stock outstanding of which $299,500 was inter-company held and cancelled in the consolidation, leaving only $500 of the common stock to be paid for in Series-B bonds. They were paid for at the rate of $25.00 per share in bonds or a total of $125.00.

The Columbus Citizens Telephone Company had outstanding on the date of the consolidation $750,000 in common stock, $802,100.00 in preferred stock, and $649,000 in first mortgage bonds.

The first mortgage bonds were assumed by The Ohio State Telephone Company and for the common stock 8/10 of a share of new common and 1/3 of a share of new preferred was issued.

For the preferred stock of The Columbus Citizens Telephone Company new preferred stock was issued at par.

So, as a result of that transaction there was $600,000.00 of common stock of the new company and $1,052,100 of the preferred stock of the new company issued for the outstanding securities of this Columbus Citizens Telephone Company. There was no increase, apparently, there— [fol. 3358] there was an increase of $100,000 there.

The Cuyahoga Telephone Company had outstanding $1,500,00- in common stock, $1,437,350 in preferred stock and bonds of $2,708,000. Of these bonds $32,000 were inter-company held, so that the Ohio State Telephone Company assumed the balance of $2,676,000.

The common stock and preferred stock of The Cuyahoga Telephone Company was exchanged at par for common and preferred stock of The Ohio State Telephone Company.

The next company is The Findlay Home Telephone Company. It had outstanding at the date of the consolidation $150,000 of common stock, $15,300 of preferred stock, and $90,000 of bonds.

Of the common stock $145,430.88 was inter-company held.

All of the preferred stock, amounting to $15,300 was inter-company held, and of the outstanding bonds $40,000 were inter-company held.

The Ohio State Telephone Company therefore assumed the balance of the bonds amounting to $50,000 and paid for the balance of the common stock amounting to $4,569.12 at the rate of $12.50 per share in Series-B bonds, a total of $571.14.

Q. The remaining securities being cancelled? A. Well, as I said, the inter-company held securities were cancelled.

Q. Well you did not say they were cancelled in this case. A. All right. The Home Telephone Company of Dayton, [fol. 3359] the next company, had $600,000 in common stock, $600,000 in preferred stock, and $250,000 first mortgage bonds outstanding at the date of consolidation.

The Ohio State Telephone Company assumed the bonds of $250,000 and issued $800,000 of its Series-B bonds for the $600,000 of common stock and $600,000 of preferred stock on the basis of $33.33-1/3 for each share of the common and par for each share of the preferred.

The next company is The Lancaster Telephone Company. It had outstanding on the date of the consolidation $100,000 in common stock; $23,400 in preferred stock and $50,000 of bonds.

Of these securities there were inter-company held and cancelled $74,000 of common, $21,300 of preferred and $22,500 in first mortgage bonds. The balance of the bonds, amounting to $27,500, were cancelled.

Q. Wait a minute; were the $27,500 cancelled? A. Or assumed, I mean—were assumed. And for the $26,000 of common stock not inter-company held, there was issued $12.50 per share in Series B bonds, a total of $3,250, and for the $2100 of preferred stock not inter-company held and cancelled there was issued $66.25 per share in Series-B bonds, a total of $1,391.25; the total Series-B bonds issued in the Lancaster Telephone Company, therefore, being $4,641.25.

The next company is The London Home Telephone Company which had outstanding at the date of the consolidation $66,500 in common stock and $66,500 in preferred stock, [fol. 3360] of which $55,750 in common and $55,750 in preferred stock, were inter-company held and cancelled. New securities for the balance were issued at the rate of one share of the new securities for two shares of the old securities. So that there were issued in the consolidation on behalf of The London Home Telephone Company $5,375.00 of common stock and $5,375.00 of preferred stock of the new company.

The Massillon Telephone Company had outstanding on the date of the consolidation $75,000 of common stock; $48,400 in preferred stock; and $75,000 in first mortgage bonds.

Of these securities $63,750 in common stock, $48,400 in preferred stock and $48,000 of the bonds were inter-company held and cancelled. The balance of the bonds, amounting to $27,000, were assumed by the new company, and for the uncancelled common stock amounting to $11,250 there was paid $18.75 per share in Series-B bonds, or a total of $2,109.38.

The next company is the Stark County Telephone Company which had outstanding $310,000 in common stock, $75,000 in preferred stock and $350,000 in first mortgage bonds; of which $282,600 in common stock and all the preferred stock, amounting to $75,000 was inter-company held and cancelled.

The bonds of $350,000 were assumed by the Ohio State Telephone Company, and for the balance of the common stock which amounted to $27,400 there was paid $64.50 per share in Series-B bonds, or a total of $17,673.00.

[fol. 3361] The Toledo Home Telephone Company had outstanding common stock amounting to $1,257,500, and first mortgage bonds amounting to $1,593,000. Of these bonds $24,300 were inter-company held and cancelled. And the balance, or $1,568,700, were assumed by The Ohio State Telephone Company.

For the common stock of The Toledo Home Telephone Company, amounting to $1,257,500, preferred stock of The Ohio State Telephone Company at par was issued.

The United States Telephone Company had outstanding at the date of the consolidation $3,100,000 in common stock, $1,095,000 in preferred stock and $2,156,000 worth of bonds. These bonds were all assumed by The Ohio State Telephone Company, and common and preferred stock of The Ohio State Telephone Company was issued at par for the common and preferred stocks of The United States Telephone Company.

The interest of The United States Telephone Company in the securities of the constituent companies of The Ohio State Telephone Company was recognized by paying for each share of common and preferred stock of The United States Telephone Company in addition to the common and preferred stock of The Ohio State Telephone Company, $15.94 in Series B. Bonds of the new company.

This made a total of Series-B bonds issued for the Capital Stocks of The United States Telephone Company amounting to $668,683.00.

The next company is The Washington Home Telephone Company, which had outstanding at the date of the consolidation $62,500 of common stock and $48,500 in first mort-
[fol. 3362] gage bonds.

Of the common stock $62,400 was inter-company held and cancelled and the balance was exchanged at par for common stock of The Ohio State Telephone Company.

The first mortgage bonds of The Washington Home Telephone Company, amounting to $48,500, were assumed in the consolidation.

The next company is The Youngstown Telephone Company which had outstanding at the date of the consolidation $200,000.00 in common stock, $69,200 in preferred stock, and $200,000 in first mortgage bonds.

All of the common stock, and $64,000 of the preferred stock were inter-company held and cancelled, so that there was left for exchange only $5200 of the preferred stock, for which the new company paid $99.71 a share in Series-B bonds or a total of $5,184.92.

The bonds of The Youngstown Company amounting to $200,000 were assumed by The Ohio State Telephone Company.

Mr. Burr: Mr. McConnaughey, if the stenographer can correctly get all of these figures at the speed they are coming, he is more perfect than I think he is, and it would be my suggestion that it be understood between us that where there might possibly be a discrepancy between the figures as shown in the exhibit and those contained in the spoken testimony, that the figures in the exhibit be taken as the correct ones.

Mr. McConnaughey: Certainly.

The Witness: The last company in the table is the Zanes- [fol. 3363] ville Telephone and Telegraph Company, which had outstanding securities in common stock amounting to $205,000 at the date of the consolidation all of which was inter-company held and cancelled, so that no securities of the new company were issued or assumed on behalf of the Zanesville company.

There are only two of these various companies in which there was a greater par value of new securities issued than were outstanding prior to the merger. These two companies were The Columbus Citizens Telephone Company and The United States Telephone Company, which were taken over on the bases already mentioned.

The Cuyahoga Telephone Company and the Washington Home Telephone Company's securities were exchanged at par and preferred stock of the new company was issued at par in exchange for common stock of The Toledo Home Telephone Company. Does that answer your question?

Q. Well, now, I wish you would state what was the net result of these various transactions resulting from the exchange of securities upon this consolidation of the various companies into the Ohio State company which brought you this net figure of $306,430.88.

A. The net result was an increase in securities actually delivered for the securities of the old company, amounting to $303,359.77, and securities issued but not charged against any one of these companies amounting to $3071.11, or a total of $306,430.88, which increase in capitalization was charged into the property account, and constitutes a part of that [fol. 3364] $107,000,000 book value at the present time.

Q. Without representing any addition of property?

A. Without representing any addition of property.

Q. And that is the reason why you think it proper to take it out of that account?

A. Yes.

Mr. Burr: May I ask a question?

Mr. McConnaughey: Yes, certainly.

Mr. Burr: Mr. Morse, isn't it true that before the consolidation of these fifteen companies to which you have referred, into The Ohio State Telephone Company, there were outstanding the securities shown in the first three columns of figures on page 14?

The Witness: Yes, sir.

Mr. Burr: And after the consolidation, which was not a purchase-and-sale, you understand, but a consolidation——

The Witness: Yes, sir.

Mr. Burr: Under the Ohio Consolidation Laws, were there not outstanding the securities shown in the last four columns on page 14?

The Witness: That is true, yes, sir.

Mr. Burr: Did that not amount to a net reduction in outstanding securities of The Ohio State Telephone Company after the consolidation as against the securities of the fifteen constituent companies before the consolidation of $1,783,000 plus? Will you make that computation?

The Witness: That is approximately correct, with this explanation, that $2,086,180 of these outstanding securities [fol. 3365] were held by the companies themselves, either one company holding its own securities or other compan-

entering into the consolidation holding the securities of other companies which were in that consolidation.

Mr. Burr: They were none the less outstanding securities prior to the consolidation, were they not, and are included in the securities shown in the first three columns on page 14?

The Witness: They were outstanding, yes, to that extent. Of course assuming the assets and liabilities, the new company took over $2,000,000 of these outstanding securities which were on both sides of the balance sheet, leaving a net outstanding of only the difference between the total outstanding and the amount held.

Mr. Burr: Thank you.

By Mr. McConnaughey:

Q. All right, Mr. Morse; now take up the next item and explain that.

A. The next item making up this $1,278,089.20 is an item of $344,912.64 shown in the table at the top of page 14 as "Sundry Adjustments". This item is shown in detail in the table on pages 55, 56, 57, 58, 59 and 60.

On page 55 under the heading "Sundry Adjustments" are items covering unissued securities, contingent liabilities for damages and franchise tax, suspended accounts, materials and supplies, unclaimed wages, sundry investments, stocks and bonds, inter-company accounts, accounts payable, prepayments, and miscellaneous items amounting [fol. 3366] to a credit item of $2,329,922.85. Included in this total is the surplus item of $1,232,732.99 which has already been explained.

The remainder of this $2,329,000 less the depreciation reserve of $1,442,089.50, amounts to $344,912.64, that item being all the items that I have mentioned with the exception of the two credit items for surplus and depreciation reserve shown on page 56.

None of these items represent the cost of physical property, and in this adjustment, have been deducted from the total book value, in order to arrive at the original cost of the physical property itself.

Q. Well those items constitute a part of the opening entry of the property and plant account of The Ohio State Telephone Company upon its organization in this consolidation?

A. Yes; in the consolidation that item, $344,912.64, was charged into the property and plant account of The Ohio State Telephone Company as an adjustment of the various balance sheets and property accounts of the constituent companies.

Q. But did not represent any actual property, and therefore you think they shoud be taken out; is that correct?

A. That is correct. This item of $1,442,089.50 represents the accumulated reserves for depreciation on the books of the constituent companies of The Ohio State Telephone Company.

In making this adjustment we have not added back the amount of these depreciation reserves which were credited to the plant account in the consolidation. The independent [fol. 3367] companies did not maintain the same classification of accounts and were not under the same supervision as the Bell companies, and it is quite probable that property written off during the life of these various companies from early in 1890 up to 1914 was never credited to the plant account.

When The Ohio State Telephone Company took over these companies, or they were consolidated into The Ohio State Telephone Company, they were consolidated at the depreciated value, and we have not added that depreciation back.

Q. Well have you taken care of it in any way in making your adjustment?

A. We have allowed it to stand. The company had written it off and we allowed it to be written off as representing property that was not in existence at the time of the consolidation. It was actually credited to the plant and equipment account of The Ohio State Telephone Company in the open journal entry.

The next item in the table, at the top of page 14, is Reserves, $621,757.40. This is also shown in detail in the table on pages 55, 56, 57, 58, 59 and 60, and comprises the reserve for bond discount which was set up by The Ohio State Telephone Company in its opening journal entry as a charge to property to cover a discount on the Series-B bonds.

It also covers sundry other reserve balances for contingencies, miscellaneous accounts receivable, for insurance, uncollectible accounts and damages which appear on the [fol. 3368] books of the various constituent companies.

The next item of credit $46,511.84 represents the adjustment of revenues and expenses for the period between the first of July, 1914, and the 23rd of July, at which date the consolidation took effect.

The prepaid revenues or revenues paid in advance slightly exceeded the charge for expenses so that the net result of the adjustment was a credit of $46,511.84. This also was credited to the property and plant account in the opening journal entry, and, as it does not represent cost of physical property, we have eliminated it in this study.

Q. Do those details appear any place else?

A. Those details appear in this same table beginning on page 55 and at the top of page 57 "Total Revenues and Expenses"; the last item of $51,500.12, "Interest, Dividends, etc." appears on the same table, page 57, and comprises the various adjustments of bond interest, interest on notes, interest on certificates of deposit, notes receivable, sinking fund, accrued dividends, unamortized debt, discount and expense and sinking fund liabilities. These items were all income items and should not have been charged to the cost of property, and we have eliminated them.

Those five items, then, of $306,430.88 covering the exchange of stocks, $344,912.64, Sundry Adjustments, $621,757.40 for reserves, a credit of $46,511.84 for revenues and expenses, and a debit of $51,500.12 for interest and divi-
[fol. 3369] dends, make up the item on page 11 entitled "Sundry Charges and Credits to Property Account on Consolidation, Constituent Companies of The Ohio State Telephone Company", amounting to $1,278,089.20.

Q. Now take the next item.

A. The next item amounting to $1,828,875.00 represents the estimated excess of par values of common stocks and bonds charged to property and plant accounts over the selling price.

Q. Explain that item, please.

A. On page 16 there is a table showing for thirteen of the constituent companies of The Ohio State Telephone Company the amounts of capital stocks and bonds respectively charged to property account.

In the records of The Ohio Bell Telephone Company there was a memorandum to the effect that these capital stocks and bonds had been sold or disposed of—the capital stock—at an average discount of 25 per cent and the bonds at an average discount of 12½ per cent. And from the memo-

randum it appears that these discounts were taken into consideration in deciding how much the securities of the new company should be issued in payment for the securities of the consolidated constituent companies.

We have applied to the total of these capital stocks shown on page 16 a discount of 25% and to the bonds charged to the property accounts a discount of 12½%.

The aggregate capital stocks charged to the property accounts of the various companies amounts to $3,918,000. 25% of that is $979,500.00.

[fol. 3370] There were bonds charged to property account amounting to $6,795,000.00, and 12½% of that is $849,375.00.

The total of the discount on the capital stock and bonds amounts to $1,828,875.

We made this deduction because we presumed that the contractors who received these securities in payment for their services and under their contracts for building the various companies, received them at a figure which approximated the cost of the contracts; in other words, the actual construction cost of the company. So, assuming this to be the case, we have made these deductions of 25 per cent of the common stock and 12½ per cent of the bonds, and deducted that amount from the total property account in the attempt to arrive at the original cost.

Mr. Burr: Wait just a minute. I call attention at this point to the fact that the last answer of the witness and several other previous answers have contained certain assumptions and presumptions, and without undertaking to interrupt the witness and making a motion to strike out his answer each time these elements appeared in it, I would like to have it understood that the answers are subject to the same objection as heretofore stated with reference to the questions, and that we reserve our objections and exceptions with respect to them.

For example, this last answer contains both a presumption and an assumption,—a violent assumption, it seems to me,—and while I do not want to interrupt the witness each time with a motion to strike out the answer, I would like [fol. 3371] to have the record show that we are objecting to answers in that form and that we reserve the right to raise the question at a later point in the inquiry.

Mr. McConnaughey: Well now, that is perfectly all right,

with this exception, that as I recall the testimony of Mr. Morse this is the first item of the kind upon which or as to which there has been any statement about an assumption or a presumption. In other words every other item has been founded upon entries on the books.

Mr. Burr: Yes, but while in some instances he has not used the word "assumption", his answers involve assumptions, none the less.

Mr. McConnaughey: Oh, well, that is a matter of expression of his opinion with reference to the effect of those entries. I do not see your point there at all. He is saying that the entry is wrong. And since that question has arisen I think it would be proper in connection with this item to ask the company, if it cares to contest this item, to produce the memorandum which is in their possession and which is the basis of this particular item, so that we may all see just what it amounts to.

Mr. Burr: Well you have already had access to the memorandum, as I understand it, because he is now attempting to quote from the memorandum.

Mr. McConnaughey: Yes, it is your memorandum. If you want to make any question about it, I think you should bring it before the Commission and let us question it in that way.

[fol. 3372] Mr. Burr: My only point is that I did not want to interrupt the witness with a motion to strike out, and yet by my silence I do not want to be understood that we waive any question as to the relevancy or materiality or propriety of the answer. That is all I am trying to get at at this time, and if it can be understood that we reserve our exceptions as to answers that do involve assumptions and presumptions, that is all we ask.

Mr. McConnaughey: That is perfectly all right, but when you argue your exceptions I wish you would bring that memorandum so we can talk about the same thing.

Q. Now are you through with that item, Mr. Morse?

A. Yes, sir. I would like to add to this a further explanation of this table on page 16 showing capital stocks charged to property and bonds charged to property; that I have attempted to eliminate any capital stock and bonds that were actually paid for in cash. If the subscription to the capital stock or bonds showed that the actual cash had been paid over to the company and then used for construc-

tion purposes I have not made any deduction for discount on that particular amount of bonds and stock. But where the capital stock was charged in at its par value and the bonds were charged in at their face value without apparently any cash having exchanged hands on either side, I have made this deduction of 25 per cent and 12½ per cent respectively.

Q. How did you arrive at these percentages, Mr. Morse?

A. Stated in this memorandum that I have referred to [fol. 3373] which I found in the files of The Ohio Bell Telephone Company.

Q. Are they stated in terms of an average percentage or percentages of each of the individual stocks listed here?

A. Just the one percentage as I recall the wording of the memorandum; an average percentage for the stocks of these underlying companies.

Q. I see; all right.

A. The total of the items so far discussed, all of which relate to the constituent companies of The Ohio State Telephone Company, amounts to $3,424,305.49 as shown on the bottom of page 11.

The table continues over on page 12 and the first item is Intangible Capital as it appears in the accounts of the three companies, The Akron Peoples Telephone Company being $273,775.46; The Citizens Telephone Company of Berea, $3,402.28; and the Chesapeake & Potomac Telephone Company of West Virginia, $289,752.25.

Q. Do those items appear elsewhere in the report?

A. The first item, the Akron Peoples Telephone Company, $273,775.46 does not appear as a separate item in the analysis of the property and plant account of that company which appears on page 88 of Mr. Hagenah's exhibit. It is included in that opening entry of $739,655.68 entitled, "Cost of Plant as of January 1st, 1913."

The item of $3,402.28, The Citizens Telephone Company of Berea, appears under the caption "Intangible Property" on page 92 in the table which shows the analysis of the property and plant account by years, from January 1st, 1916, to July 31, 1918.

[fol. 3374] The item of $289,752.26 for the Chesapeake and Potomac Telephone Company of West Virginia appears on the table at page 43 which shows the property and plant account taken over by The Ohio Bell Telephone Company

on December 31, 1921, from The Chesapeake & Potomac Telephone Company of West Virginia.

This amount of $289,752.25 is included as "Other intangible Capital" and constitutes a portion of the total book value of the property located in the State of Ohio.

We had no records of the property and plant account of the Chesapeake & Potomac Telephone Company of West Virginia covering this property, and the item of $3,635,-236.80 represents the amount which the Ohio Bell Telephone Company paid for the property of the West Virginia Company which was located in the State of Ohio. The item was eliminated as it did not represent physical property.

The next items in the table on page 12 under the heading "Surplus" represent the surplus accounts of the companies listed, all of which were taken over and the surpluses credited to the property and plant account of the Ohio State Telephone Company prior to its consolidation with The Ohio Bell Telephone Company.

The last item in that group, "Surplus of the Springfield-Xenia Telephone Company" was credited on the books of The Ohio Bell Telephone Company to the consolidation in 1921. These items, as heretofore explained, are surplus items and do not affect the actual cost of physical property and in arriving at the original cost of the property of The [fol. 3375] Ohio Bell Telephone Company this item has been added back to the book value.

The next item or group of items under the heading "Excess or Par Value of Stocks and Bonds cancelled Over the Cost", represents the difference between the costs of the stocks and bonds as held by either—in all cases except the last—by the Ohio State Telephone Company, and the par value of the securities purchased. The Springfield-Xenia Telephone Company was purchased by the Ohio Bell Telephone Company after the consolidation and the securities cancelled exceeded the cost to the Ohio Bell Telephone Company by $508,448.72 as shown in the table.

The net result of these purchases was therefore to decrease the property and plant account; although the items credited to the property and plant account do not affect cost of property, they are added back through this credit adjustment in this table on page 12.

[fol. 3376] Q. Now are these several items that you have

just been talking about in surplus and excess of par value of stocks referred to in any other tables in the exhibit?

A. They do not appear as items in the plant accounts of the respective companies. The total of these three items $566,929.99 and the credit item of $123,491.78 and the credit item of $570,507.75 is a net credit of $127,069.54. This item has actually been credited on the books of The Ohio Bell Telephone Company to the property and plant account, and in attempting to arrive at the original cost of the property it is added back through this adjustment.

Q. Now the next item of intangible capital?

A. The next item "Intangible capital, The Ohio Bell Telephone Company" represents charges to the other intangible capital for property displaced in connection with the purchase of property at Sandusky. This also has been eliminated as representing actual cost of physical property.

Q. As representing or as not representing?

A. As not representing cost of physical property, I should say.

Q. Is that referred to in any other page of the exhibit?

A. I will see. It is made up of the two items on the table on page 35 for the years 1922 and 1923, the items respectively being $33,332.58 in 1922 and $7284.58 in 1923.

Mr. Burr: Will you give me the line of those two figures, please?

The Witness: It is the third line in the table.

[fol. 3377] Mr. Burr: Can you tell me the theory upon which you deducted those two items?

The Witness: They represent charges for displaced property.

Mr. Burr: For the purpose of identification, can you give us any more information about them than that?

The Witness: Displaced property in connection with the Sandusky Home Telephone Company.

Mr. Burr: Do they have to do altogether with the purchase of the property of that company by The Ohio Bell Telephone Company?

The Witness: By The Ohio Bell Telephone Company and its rehabilitation in 1922 and 1923. The majority of the items make up those two items there. There may be sundry charges in there of smaller amounts but the larger items are from that source.

By Mr. McConnaughey:

Q. Is there any reference to these items in the property account of the Sandusky property?

A. No; they are on the books of the Ohio Bell.

The last item on the table on page 12 "Increase in appraisal, The Cleveland Telephone Company, $104,209.10" represents an adjustment of the book value through an appraisal made in November, 1912, at which time the property and plant account of The Cleveland Telephone Company was written up by that amount as shown in the table which covers pages 36, 37, 38 and 39, and in the first column on page 39 near the bottom of the page; that item being a [fol. 3378] write-up to adjust the book value cost to an appraisal, was eliminated as not representing actual cost.

Mr. Burr: Then am I correct in understanding that all of the items shown on page 9 with the exception of the one of $40,617.23 are adjustments with respect to the property and accounts of companies other than The Ohio Bell Telephone Company and that whatever resulted in those adjustments occurred prior to the acquisition of the properties of those companies by The Ohio Bell Telephone Company?

The Witness: With the exception of The Springfield-Xenia Company, which was purchased after 1921—purchased by the present company.

Mr. Burr: Was that an adjustment on the books of The Springfield-Xenia Company or on the books of The Ohio Bell Telephone Company?

The Witness: It was an adjustment between the book values shown by the books of The Springfield-Xenia Company and the amount at which it was taken over by The Ohio Bell Telephone Company. The adjustment, as such, I could hardly say appeared in either of the books. The amounts appear in one set of books as one figure and were taken over in the other set of books at another figure and the difference is the item shown on this table. That is to be understood where I said the items appear on the books, that they appear in that way, that they appear in the original books at one figure and were taken over in the books [fol. 3379] of another company at another figure. The difference is adjusted through this table.

By Mr. McConnaughey:

Q. All of these differences listed under the head of "Excess of par value of stocks and bonds cancelled over cost" are items of that sort?

A. Are items of that sort, yes, sir. The surplus items, of course, do not appear in the property and plant accounts. They are in the balance sheet items.

Q. Well, how about those intangible capital items with reference to the books of The Ohio Bell Telephone Company?

A. That item of $289,000.00 for The Chesapeake & Potomac Telephone Company of West Virginia does appear on the books of The Ohio Bell Telephone Company as the property was taken over and put on their books on December 31, 1921. The other two items are in the books of the Ohio State Telephone Company prior to the organization or the consolidation.

Q. What is the effect of these adjustments which you say should be made?

A. The aggregate of all the items that have been discussed is $3,442,062.28. That item represents the net debit to the property and plant account which this analysis shows do not represent cost of physical property, and on that account they have been deducted from the book value of the property and plant account at December 31, 1925. That book value was $107,704,005.35, and the aggregate of all the adjustments is $3,442,062.28. The balance or estimated original cost is, therefore, $104,261,943.07 and that figure represents their estimated original cost of the property as [fol. 3380] of December 31, 1925.

Mr. Postle: You are referring to physical property?

The Witness: As the cost of physical property.

By Mr. McConnaughey:

Q. State what is the fact as to whether or not there are any intangibles left in that figure of $104,261,943.07?

A. There are no intangibles remaining in that figure.

Q. And exactly what property of the company does that represent?

A. That represents the physical property only.

Q. That is, it represents the cost of the physical property as you understand it?

A. Yes, sir. The next section of the report on page 17 deals with the earnings and operating expenses of The Ohio Bell Telephone Company.

Q. Mr. Morse, I wish you would state what is the present capital stock of The Ohio Bell Telephone Company?

A. The present capital stock is $45,000,000.00 common stock; $28,216,400 outstanding preferred stock with a stock liability for conversion of $9,246.88 as of December 31, 1925, or total capital stock outstanding on that date of $73,225,646.88.

Q. Where does that information appear in this exhibit, Hagenah Exhibit number 1?

A. On page 7 in the second column headed "December 31, 1925."

Q. And what is the funded debt of the company?

A. The funded indebtedness of The Ohio Bell Telephone Company as of December 31, 1925, was $10,312,000.00, and there were advances from the system's corporation amount-
[fol. 3381] ing to $7,715,607.94, making a total of funded debt and long term debt of $18,027,607.94. The funded debt consists of $4,851,000.00 underwriting bonds of the constituent companies of The Ohio State Telephone Company, $687,000.00 Series A bonds of The Ohio State Telephone Company and $4,744,000.00 of Series B bonds of The Ohio State Telephone Company.

Q. And what is that item of "Advances from system corporation," if you know?

A. That is the balance due The American Telephone & Telegraph Company by The Ohio Bell Telephone Company for advances for construction and betterments.

Q. And what is the total of stock and long term debt as shown by this balance sheet?

A. The total capital stock and long term funded debt as of December 31, 1925, is $91,253,254.82.

Q. Referring back to page 7, I wish you would state what the balance sheet shows with reference to the reserve for accrued depreciation as of December 31, 1925?

A. The balance sheet item entitled "Reserve for accrued depreciation" amounted to $12,729,276.17 as of December 31, 1925.

Q. What was that item as of September 21, 1921?

A. $6,219,829.18.

Q. An increase of how much?

A. An increase during the four years and 3½ months of $6,509,446.99.

Q. And what other reserves are shown there?

[fol. 3382] A. A reserve for amortization of landed capital which amounted, on December 31, 1925, to $243,258.47, an increase over September 21, 1921, of $880.37.

Q. And what does this statement show with reference to the surplus of the company?

A. The corporate surplus unappropriated on September 21, 1921, was $2,302,131.64 and on December 31, 1925, $2,399,519.82, an increase during the period of $97,388.18.

Q. How about the appropriated surplus?

A. The appropriated surplus increased from $121,243.59 on September 21, 1921, to $1,235,618.82 on December 31, 1925, an increase during the period of $1,114,375.23.

Q. Explain the significance of the term "Appropriated surplus," Mr. Morse?

A. The appropriated surplus is a portion of the net earnings of the company set aside for particular purposes, such as possibly setting up a reserve for various purposes. I do not know what makes up that $1,235,000.00 because I have not analyzed the surplus account to that extent.

The balance unappropriated represents the amount that is available. It might be set aside for various purposes in accordance with the classification of accounts as prescribed by the Interstate Commerce Commission.

Q. As for instance, what?

A. The creation of certain reserves out of surplus instead of out of earnings.

Q. And the total surplus as of December 31, 1925 was what?

A. $3,635,138.64.

[fol. 3383] Q. The increase in the total surplus being how much?

A. $1,211,763.41.

Q. Now refer to page 17 and discuss your report with reference to earnings and operating expenses?

A. For the purpose of showing the operating expenses and the operating revenues of The Ohio Bell Telephone Company for the period from September 21, 1921 to the end of December, 1925 we drew off from their books, according to the classification of accounts, the revenues and expenses in detail. These revenues and expenses are shown in tables attached to this report.

On page 26 is a statement of the telephone operating revenues by years, from September 21, 1921 to December 31, 1925.

This shows telephone operating revenues for the first complete year after consolidation which was the year ended December 31, 1922, amounting to $22,956,375.25.

The total telephone operating revenue for the year ended December 31, 1925, was $29,967,001.19.

On pages 28 and 29 is a table showing the telephone operating expenses by years from September 21, 1921 to December 31, 1925 according to the classification of telephone operating expenses prescribed by the Interstate Commerce Commission and generally used by The Bell Telephone Companies.

The total telephone operating expenses for the first complete year after consolidation, namely, for the year ended December 31, 1922 was $16,721,485.18. For the year ended [fol. 3384] December 31, 1925, they were $20,592,053.75.

These totals are carried forward into a table at the top of page 18 which shows, in condensed form, the operating revenues, operating expenses, net telephone operating revenues, deductions from operating revenues, net operating revenue, net non-operating revenue, gross income, rent deductions and net earnings available for interest, dividends, amortization, etc., for each of the four years ended December 31, 1922, 1923, 1924 and 1925 inclusive.

These totals have been reduced in the table to a per station basis so that the table, in addition to showing the aggregate operating revenues, expenses, etc., also shows the operating revenues, expenses, deductions, non-operating revenue, etc., per station—per average station in service for each of the four years mentioned.

There have been substantial increases in both the operating revenues and operating expenses of the company, the increases in operating revenues being at a greater rate per cent than the increase in operating expenses.

The operating revenue for the four year period increased 30½% from $22,956,375.00 to $29,967,000.00.

The operating expenses increased 23.1% from $16,721,485.00 to $20,592,053.00.

The net telephone revenues increased 50.3% from $6,234,890.00 in 1922 to $9,374,947.00 in 1925.

The net earnings available for return on the investment [fol. 3385] increased 70.7% from $3,788,522.00 in 1922 to $6,471,480.00 in 1925.

When we compute those on the station basis the increases were somewhat less. On the station basis the operating revenue increased 20.6%; the operating expenses 13.7%; the net telephone operating revenue 38.9% and the net earnings available for interest, dividends, amortization, etc., increased only 57.6%.

The information which is contained in the table on page 18 in condensed form is expanded somewhat in the table at the top of page 19 where the telephone operating revenues shown in a single amount on page 18 are divided according to the classification of accounts, into exchange revenue, toll revenue, miscellaneous revenue and licensee revenue Dr.

The total telephone operating revenues shown in the table on page 19 being the same, year for year, as the first line of the table on page 18.

The telephone operating expenses are also divided into five groups, maintenance expense exclusive of depreciation, depreciation of plant and equipment, traffic, commercial and general and miscellaneous; the total telephone operating expenses shown by the table on page 19 being the same as the operating expenses shown in the second line of the table on page 18 for the respective years.

The net telephone operating revenue shown on page 19 [fol. 3386] is also the same as the net telephone operating revenue shown on the third line on page 18.

Q. What is the item in the exchange revenue portion of this statement called "Licensee revenue Dr"?

A. The item known as "Licensee revenue Dr" is a deduction from gross operating revenue. It is not an exchange item. It represents 4½%——

Mr. Burr: Now 4%?

The Witness: Now 4%; you asked me "included under the heading of exchange revenues."

Q. I should have said "telephone revenues."

A. I misunderstood your question, then.

Q. I intended to say revenue.

A. It represents the 4½% payment to The American Telephone & Telegraph Company which has now been reduced to 4%.

Q. And what does your statement show with reference to the amount of that in the first and the final years?

A. For the year ended December 31, 1922 the total payment was $881,029.00 or $1.82 per station. In the year ended December 31, 1925, the total payment was $1,274,-052.29 or $2.44 per average station in service.

Q. What is the amount of the depreciation for each year or for the first year and the last year covered by this statement?

A. The depreciation of plant and equipment for the year ended December 31, 1922, is $4,231,844.95 or $8.79 per average station in service.

For the year ended December 31, 1925, the depreciation [fol. 3387] of plant and equipment amounted to $4,055,-589.09 or an average per station in service of $9.69.

Q. Now what is the remainder of this report made up of, Mr. Morse?

A. Following page 20 is a series of tables, a list of which is given on the bottom of page 19 and the top of page 20. These tables contain the data drawn from the books and records of The Ohio Bell Telephone Company, The Ohio State Telephone Company and the constituent companies of The Ohio State Telephone Company as well as from such books and records of purchased companies as we were able to obtain.

The first table shows the income, profit and loss and surplus, by years, from September 21, 1921 to December 31, 1925, and sets forth the profit and loss or income account of the present company from its organization to the end of 1925 by years.

The surplus item shown at the end of the table checks with the unappropriated surplus shown in the balance sheet on pages 6 and 7.

Q. What are these figures embodied in this report; what is the source of them?

A. These figures were taken directly from the books and records of The Ohio Bell Telephone Company and reflect the operations of the company during that period as recorded on their books.

Q. How are those books kept?

A. Those books are kept according to the classification of accounts prescribed by the Interstate Commerce Commission.

[fol. 3388] Q. And these tables that you have presented here and are presenting, embody no adjustments?

A. They embody no adjustments in the accounts of the company. Following the table showing the amount of income and profit and loss and surplus by years——

Q. What page is that on?

A. On pages 24 and 25 we have computed the same information on a per station basis for the years 1922 to 1925 inclusive. This table shows for each year for the various classifications, the revenue, expenses, non-operating revenue and non-operating expenses, deductions from gross income, appropriations of net income, etc., on a per station basis for the company as a whole.

The table on page 26——

Q. This data is also from their books?

A. This is a computation from their books—the stations shown in their books and the operating revenues and expenses, etc., as taken from their books.

Q. Where did you get the number of stations that you used in these calculations?

A. The stations were taken from the company reports showing stations in service in the beginning and end of each year.

Q. And what figure did you use as the number of stations, the number at the beginning or at the end?

A. The average for the year. The company's figures are ordinarily computed on a monthly average, but we have used in all these tables a yearly average of the first and last of the year.

Q. Let me ask you if you show anywhere in your reports or exhibits the number of stations?

[fol. 3389] A. It is not shown on any of these exhibits.

Q. All right.

A. On page 26 we have already referred to the statement of telephone operating revenues by years.

Page 27 shows the same information reduced to a per station basis, the same average stations being used in this table as were used in the preceding table.

Pages 28 and 29 covering the table of operating revenues and expenses, is followed by a table on pages 30 and 31 showing the same information reduced to a station basis.

In this table it is interesting to note that the total maintenance expense including depreciation has increased from $17.03 per station in 1922 to $18.79 per station in 1925.

The traffic expense increased from $12.09 in 1922 to $14.41 in 1925.

The commercial expense increased from $4.10 per station in 1922 to $4.41 per station in 1925.

The general and miscellaneous expense increased from $1.49 per station in 1922 to $1.87 per station in 1925.

The total operating expenses increased from $34.71 per station in 1922 to $39.48 per station in 1925.

Q. What is the next?

A. Following the table just discussed is a table on pages 32 and 33, a summary of additions to property and plant account by years and companies.

[fol. 3390] The first column shows the yearly increase in the property and plant account of The Ohio Bell Telephone Company as an entire property, starting in 1899 with the opening entries of The Cleveland Telephone Company and continuing down to 1900 when the first properties of The Ohio State Telephone Company were constructed, and continuing down through the life of The Ohio State Telephone Company and The Cleveland Telephone Company to 1921 when the present The Ohio Bell Telephone Company began operations.

The aggregate of the first column represents the present book value of the property and plant account of The Ohio Bell Telephone Company, or $107,704,005.35.

Q. That is the same figure that you referred to a while ago without any adjustments as the plant value?

A. That is the book value without any adjustments of the property and plant account.

The first column after the total represents the additions on the books of the present company from September, 1921 to the end of December, 1925.

The next column——

Q. Mr. Morse, may I ask you to state whether or not these additions are the net additions for each year?

A. These are the net additions for the year; so that the total of the column represents the present book value, from the total of column 2 which is $29,864,072.94; that is the total increase in the property and plant account of the present company from September, 1921 to December, 1925.

In the next column or column 3, the net additions year by [fol. 3391] year of The Cleveland Telephone Company are shown. The Cleveland Telephone Company has already changed its name in 1920 to The Ohio Bell Telephone Com-

pany, so that the additions for the years 1920 and 1921 were under the name of The Ohio Bell Telephone Company instead of The Cleveland Telephone Company.

The total book value of the property of The Cleveland Telephone Company as of the date of the consolidation in 1921, as has already been stated, was $49,056,111.24.

In the next column are shown a total of all the columns to the right, which represent the additions year by year on the books of the various companies named.

The Ohio State Telephone Company, as a company, operated from July, 1914 to September, 1921, and the figures shown in the column headed "Ohio State Telephone Company, 1914 to 1921" represent the additions on the books of The Ohio State Telephone Company after its organization and up to the date of consolidation with The Cleveland Telephone Company or The Ohio Bell Telephone Company.

The 15 columns to the right of the column just mentioned show the yearly additions to the property and plant account of each of the companies named from the earliest date that we were able to secure their records, down to July, 1914 when the properties were consolidated to form The Ohio State Telephone Company.

Q. What is the significance of the red figures that appear from time to time in these columns?

A. The red figures indicate that during those years there [fol. 3392] were credits to plant in greater amount than charges, so that the plant in those particular years was reduced. These figures are figures according to the books of the individual companies named.

Commissioner Poor: Mr. Morse, on pages 37 and 33, is the figure shown in the first column of totals there the sum of the succeeding figures across that line?

The Witness: No; it adds up only from the first three columns, The Ohio Bell Company, The Cleveland Telephone Company and The Ohio State Company. Those three columns alone make the first column, because The Ohio State Company is a total of all the columns to the right.

Commissioner Poor: I understand.

By Mr. McConnaughey:

Q. So that the total of all the columns to the right of the first column actually do figure in the first column?

A. They go to make up the first column, yes. There is a sub-total run in there in the 4th column called "The Ohio

State Telephone Company." That is a sub-total of the columns to the right.

Q. Are you through with that page?

A. Yes.

Q. There is a note at the bottom of that page as follows: "See next page for note;" explain what the purpose of that note is?

A. The purpose of that note on page 34 was to reconcile the credit shown in the table on page 32 of $1,026,040.21 with the net additions actually appearing on the books of The Ohio State Telephone Company.

[fol. 3393] Reference has already been made to a number of adjustments that were made in the opening journal entry of The Ohio State Telephone Company. This was distributed among various companies and only the net figure taken over onto the books of the new company. During the balance of the year 1914 The Ohio State Telephone Company added to its property and plant account $369,443.72 while in the adjustment betweeen its opening book value and the combined book values of its constituent companies there was a reduction of $1,395,483.93. In order to make the table balance across it was necessary to put in that credit item in 1914 instead of the debit item, and this note reconciles the two figures.

Following the summary table on pages 32, 33 and 34 are tables setting forth the yearly additions to the property and plant account of the various companies which comprise the present Ohio Bell Telephone Company.

The table on page 35 shows the additions of the present company from the date of its opening entry on September 21, 1921, by years, to December 31, 1925; the property and plant account increasing from $76,839,932.41 on September 21, 1921 to the figure on December 31, 1925 of $107,704,005.35.

The table on pages 36, 37, 38 and 39 shows the yearly additions to the property and plant account of The Cleveland Telephone Company from October 1, 1899, when the books were opened with a plant value of $553,459.11, to September 20, 1921 when the books were finally closed with a book value [fol. 3394] of $49,056,111.24.

The company, as I have already stated, changed its name to The Ohio Bell Telephone Company in October, 1920, and included in the net additions for the year 1920 is the purchase price of the property of The Central Union

Telephone Company located in the State of Ohio. Reference has already been made to that.

The notes at the bottom of the page merely elaborate certain totals which appear in the last column on page 39, the first note "a" representing a division of the central office equipment; the second note representing the division of the station equipment, and the third total representing the details of the general equipment. These accounts were combined for the entire period because throughout a large part of the company's history there was no division between these accounts as now carried under the Interstate Commerce Commission classification.

On page 40 is an analysis of the property and plant account taken over by The Ohio Bell Telephone Company from The Central Union Telephone Company. This property was the property located in the State of Ohio owned by The Central Union Telephone Company, and the price paid for the property, as already testified, was $26,526,716.23. That figure of $26,000,000.00 represents the portion that was charged to property and plant account only and does not include the miscellaneous assets and liabilities that were taken over at that time.

[fol. 3395] Q. What is the source of the information on this page 40 with reference to The Central Union Telephone Company?

A. The records of The Ohio Bell Telephone Company in 1920 show that this amount was taken over from The Central Union Telephone Company under their agreement to consolidate in The Ohio Bell Telephone Company all the properties of the Bell System in the State of Ohio. The amounts appear in the records of The Ohio Bell Telephone Company.

Q. All right; now the next, page 42?

A. Pages 41 and 42 contain an analysis year by year of the book value of the property and plant account of the Middletown Telephone Company, which was taken over by The Ohio Bell Telephone Company as of November 30, 1921, the total book value taken over being $334,574.39.

As of December 31, 1921 The Ohio Bell Telephone Company took over the Ohio properties of The Chesapeake & Potomac Telephone Company of West Virginia, as shown on page 43, the total consideration being $3,635,236.80 covering the physical property and intangibles which were taken over at that time.

On page 44 is a statement of the property and plant taken over by The Ohio Bell Telephone Company from The Sandusky Home Telephone Company as of January 31, 1922. The total charged to property and plant account in connection with that purchase was $144,855.87.

The table on pages 45 and 46 shows the year by year [fol. 3396] analysis of the property and plant account of The Springfield-Xenia Telephone Company from September 30, 1904 to September 30, 1922, at which latter date it was taken over by The Ohio Bell Telephone Company.

The book value of The Springfield-Xenia Telephone Company on September 30, 1922 was $1,508,168.69.

The adjustment in connection with the purchase price of that property was referred to in connection with the discussion of the items on page 12.

On page 47 is an analysis of the property and plant account, by years, from September 30, 1918 to November 30, 1922 of The Coschocton Telephone Company, which was purchased by The Ohio Bell Telephone Company as of the latter date. The book value of the property and plant account of the company taken over by The Ohio Bell Telephone Company was $209,438.28.

The Franklin County Telephone Company——

Q. You are on what page now?

A. The analysis of the property and plant account of The Franklin County Telephone Company is shown on pages 48 and 49. That company was under lease to The Columbus Citizens Telephone Company and to The Ohio State Telephone Company throughout most of its history, and we had records of its property and plant account according to its own books only up to July 23, 1914, after which date the property and plant account additions were included in the net property and plant account additions of The Ohio State Telephone Company and The Ohio Bell Telephone Company.

[fol. 3397] The total property and plant account of The Franklin County Company as of December 31, 1922 was $320,938.43.

On pages 50 and 51 is an analysis of the property and plant account of The Gallia Telephone Company, which was taken over by The Ohio Bell Telephone Company as of December 31, 1922 with a book value of $123,086.94.

Q. Mr. Morse, the remainder of these pages refer to the remainder of these constituent properties, do they not, in a somewhat similar way?

A. Yes. I would like to make a correction.

I notice on page 52 of this exhibit the total consideration paid for the property of The Montgomery Telephone Company was $90,000.00, not $990,000.00.

Q. Well, just change it in there.

Commissioner Poor: What page is that?

The Witness: Page 52.

Commissioner Poor: The exhibit here shows $90,000.00.

The Witness: This shows $990,000.00.

Mr. McConnaughey: This copy is wrong. Just correct that in pencil on there.

Mr. Burr: What does the official copy show?

Commissioner Maullar: $90,000.00.

The Witness: That is the correct figure; $90,000.00.

By Mr. McConnaughey:

Q. Will you state generally what the remaining sheets of this exhibit show, and call attention to any particular part with reference to any of them that you may think important, without going into detail as to each one?

[fol. 3398] A. Beginning with page 53 the exhibit shows the property and plant account first of The Ohio State Telephone Company from the date of its organization in 1914 up to the date of the consolidation with The Ohio Bell Telephone Company on September 20, 1921; the reconciliation between the opening entries on the property and plant account of The Ohio State Telephone Company and the combined property and plant accounts of its constituent companies, and then following that table, the detailed analyses of property and plant accounts for the 15 constituent companies of The Ohio State Telephone Company from the earliest date for which we were able to obtain records down to the date of the consolidation of these companies to form The Ohio State Telephone Company which was July 23, 1914.

Q. What figure on each one of those pages with reference to the constituent companies of The Ohio State Company appears any place else in these sheets?

A. On the last part of the table of adjustments, namely, on pages 59 and 60, the first line is entitled "Book value

per statements of property and plant accounts of constituent companies, $22,087,818.57."

The items shown under each of the companies—the 15 companies which follow are the items which appear as the total on July 23, 1914 of the respective companies. Shown in the detailed tables which follow it, for instance on page 62, The Citizens Telephone & Message Company had a book value of its property and plant of July 23, 1914 [fol. 3399] of $148,647.78. This item appears under the first column on page 59 opposite the descriptive title.

With respect to the book values of the constituent companies, as of July 23, 1914, the same condition exists.

And thereupon the further hearing of this case was adjourned until Friday, December 10, 1926, at 10:00 o'clock A. M.

[fol. 3400] Friday Morning Session

December 10th, 1926, 10:00 o'clock.

And also ROBERT K. MORSE, resuming the stand for further examination in chief, continued his testimony as follows:

Examined by Mr. McConnaughey:

Q. Mr. Morse, I think at the close of the hearing yesterday you had completed your discussion of Hagenah Exhibit No. 1, had you not?

A. I had, yes, sir.

Q. I now call your attention to an Exhibit entitled "Comparison of Revenues, Expenses and Profit and Loss per Station of the Ohio Bell Telephone Company with Other Large Telephone Companies." I wish you would state what that Exhibit covers. This will be known as Morse Exhibit No. 1.

And thereupon the paper writing above referred to was marked for the purposes of identification as Morse Exhibit No. 1.

Q. I wish you would state what that is, by whom it was compiled, and what is the source of the information contained therein.

Mr. Burr: May it be understood that the questions with respect to Morse Exhibit No. 1 are to be followed by the

[fol. 3401] same objections and exceptions as were noted yesterday with respect to the questions and answers pertaining to Hagenah Exhibit No. 1.

Commissioner Poor: That may be so understood.

A. This Exhibit was prepared by me from annual reports of the various companies listed, filed with the Interstate Commerce Commission in Washington, D. C. The purpose of the table is to compare the operations of the Ohio Bell Telephone Company with the corresponding operations of the large Bell operating companies in the United States that are comparable with the Ohio Bell. The table shows in the first six columns the operating revenues, expenses and net income of the New England Telephone & Telegraph Company, the New York Telephone Company, the Bell Telephone Company of Pennsylvania, the Illinois Bell Telephone Company, the Indiana Bell Telephone Company and Michigan Bell Telephone Company. The information is set forth on a per station basis, the average stations being determined by taking the mean of the stations in service at the beginning and end of the year 1925. In the seventh column the average of the six companies named is set forth and this average is compared with the corresponding figures on a per station basis of the Ohio Bell Telephone Company.

Q. What is the source of the figures as to the Ohio Bell Telephone Company?

A. From similar reports to the Interstate Commerce Commission. In addition to computing the revenues and expenses per station, the Exhibit also shows the relative order of the different amounts per station. For instance, on exchange service revenue the New England Company was [fol. 3402] seventh in order, the New York Telephone Company first.

Q. What do you mean by seventh in order now?

A. In comparing amounts of exchange service revenue per station the New York Telephone Company had the highest revenue per station of $53.56. The Illinois Bell had the next largest, the second one, with an exchange service revenue of $47.896 per station. The Ohio Bell had third largest revenue per station, $47.075 per average station. The other companies are listed the same way in the order in which they appear.

Q. And what different classes of information have you shown, grouping them and setting forth the relative order?

A. First the exchange service revenue in detail according to the source of the revenue, and then the toll service revenue according to the subdivisions of toll service revenue, and the miscellaneous operating revenues, according to the subclassification of miscellaneous operating revenues. In total operating revenues the New York Telephone Company is first, with a revenue per station of $67.227 per station, and the Ohio Bell second, with a revenue of $57.452 per station.

The operating expenses are set forth in a similar manner. First, the maintenance expenses in which the New York Telephone Company again shows first and the Ohio Bell Telephone Company second. The average expense, maintenance expense per station, of the New York Company was $21.40 per station. In the Ohio Bell, $18.789 per station.

The traffic expense is set forth by the sub-accounts under traffic expense, and for total traffic expense the Ohio Bell Company is fifth in order, with an average expense per [fol. 3403] station of $14.411. The highest expense per station being in the New York Telephone Company, $18.927.

Q. That is traffic expense?

A. That is traffic expense. The commercial expense is set forth in the same way by sub-accounts, and here the Ohio Company is sixth in order, with an average station expense, expense per station of commercial expense, of $4.408, New York still being the highest, with an expense per station of $7.294.

The general and miscellaneous expenses are also set forth according to the sub-classification of general and miscellaneous expenses, and in the relative order of expenses per station, the Ohio Bell is third, with the Indiana Bell occupying the highest position of $2.515 per station.

Q. What is the Ohio Bell?

A. The Ohio Bell average expense was $1.871. The total telephone operating expenses for the New York Telephone Company were $49.231; for the Illinois Bell, $40.24; for the Bell Telephone Company of Pennsylvania $39.648; for the Michigan Bell Telephone Company, $39.497; for the New England Telephone & Telegraph Company, $39.494; and for the Ohio Bell $39.479; and for the Indiana Bell $39.065.

The Ohio Bell in the relative order of total operating expenses, total telephone operating expenses, was sixth.

Following the telephone operating expenses and income account is set forth in the same general way, showing first the telephone operating revenues and expenses, the net telephone operating revenue and the deductions from operating revenue for uncollectibles and taxes, the operating income, [fol. 3404] the non-operating income, deductions from gross income, and net income.

In the relative order of net income the Ohio Bell Telephone Company is second, with an average net income per station of $9.443; the Michigan Bell Telephone Company, the only company which has a larger net income per station, of $9.812.

There is also added to the table the book cost of the physical property for the year ended December 31st, 1925. These figures were taken from the balance sheets of the various companies set forth in Moody's Manual of Public Utilities for the year ended December 31st, 1925, and show the book cost of the property as of that date.

The number of stations owned, taken from the same source, is also shown, and the book cost per station is computed by dividing the book cost on December 31st, 1925 by the total number of stations owned as of that date.

The average investment per station in the New York Company was $231.29; in the Bell Telephone Company of Pennsylvania $214.42; in the New England Telephone & Telegraph Company, $200.82; in the Ohio Bell Company $199.53; the Indiana Bell Company $188.33; the Michigan Bell Company $182.77, in the Illinois Bell Company $161.28. The Ohio Bell therefore showing or ranking fourth as compared with the other companies. The average for the six companies other than the Ohio Bell is shown in each case. This book cost of physical property is taken directly from the balance sheets and does not represent the estimated original cost which was discussed in connection with our [fol. 3405] Exhibit yesterday. The figures were taken, as I said, from Moody's Manual.

* * * * * * *

[fol. 3406] And thereupon the paper writing above referred to was offered in evidence on behalf of the State of Ohio, subject to the objections and exception of the Ohio Bell Telephone Company, and is herewith submitted, marked Morse Exhibit No. 1 and made a part hereof.

Q. Now, I call your attention, Mr. Morse, to an Exhibit which is entitled "Details of Materials and Supplies on Hand, from 1923 to 1925 by months." I wish you would explain first what that is in a general way and the sources of the information which is contained therein and by whom it was prepared.

A. This Exhibit was prepared by me from the records of the Ohio Bell Telephone Company and set forth by sub-accounts the analysis of the materials and supplies account for the three years, 1923, 1924 and 1925, by months. The sub-accounts are the accounts carried on the books of the company and the figures shown are the balances at the dates shown in the left margin of the table. For each year the average of the twelve monthly balances is computed and set opposite the margin, and on the second page of the table the averages for the three years are again averaged to find a three year monthly average of materials and supplies on hand as shown by the balance sheets of the Ohio Bell Telephone Company.

Mr. Burr: Now, if Mr. Morse will refrain from stating the amount, then when we object to the admission of the Exhibit, if and when it is offered, we can dispose of it [fol. 3407] then and we will not have to make the objections as we go along.

Mr. McConnaughey: We offer it in evidence now.

Mr. Burr: We object to it. We would like to reserve our objection until we have had an oportunity the same as the other, to examine the Exhibit and see what it is. We cannot do it in the limited time permitted this morning.

Mr. McConnaughey: It is offered as Morse Exhibit No. 2.

Mr. Burr: Subject to our exception.

And thereupon the paper writing above referred to was offered and admitted in evidence, subject to the objection of the Ohio Bell Telephone Company above noted, and is herewith submitted, marked Morse Exhibit No. 2 and made a part hereof.

Q. What is the purpose of this Exhibit?

A. The purpose of this Exhibit is to furnish a basis for the computation of working capital, which will be made by Mr. Hagenah.

Q. I wish you would explain the classification of items and state what information is given and the final result, without going into detail through all of the figures.

A. The classification of materials and supplies, according to the Interstate Commerce Commission system of accounts, covers a number of sub-accounts, one of which being plant supplies, another office supplies, postage, unaudited bills, property loan, stable and garage supplies, fuel, janitor and lunchroom supply, reserve for depreciation of used supplies, reserve for supply adjustment [fol. 3408] and reserve for supply adjustment of garage supplies. These accounts are all carried on the detailed ledgers and records of the Ohio Bell Telephone Company.

Q. What is covered by the item property loan?

A. Property belonging to the company which may be loaned to some other company or to some individual for use as telephone equipment, the title of which still remains in the name of the company.

Q. Now, what is the significance of the various items which appear in red in these tables?

A. They are simply credit balances on those accounts through the year which might arise from various sources. If the company had not set up a separate division for office supplies on January 31st, but in their use of supplies during the month had credited to that sub-account, there would be no offsetting debit of this red item of $9,369.79. It merely represents a condition at that particular time and is cleared out at the end of the year.

Q. What is the meaning of this account reserve for supply adjustment?

A. That is a reserve account set up to take care of differences in supply inventories and is set up by monthly accruals on the books as a reserve, and charged to supply expense.

Q. What do the totals in the last column to the right on that sheet represent?

A. The total at the end of each month represents the total book value of materials and supplies of all kinds on hand as of the date of the balance sheet.

Q. Then I assume that in that total the red figures have been deducted from the sum of the black figures?

A. Yes, sir. The last column is a cross footing of the previous columns.

[fol. 3409] Q. Now, what is the result of that calculation and Exhibit?

A. The average monthly balance of materials and sup-

plies for the year 1923 was computed by adding individual monthly balances and dividing by twelve. For the year 1923, the average monthly balance of total supplies was $1,339,096. For the year 1924——

Mr. Burr: I did not understand the witness would read from the Exhibit. I had supposed that the Exhibit would be offered to speak for itself. May his questions relating to the specific amounts go in subject to our objection as heretofore?

Commissioner Poor: Yes.

Mr. Burr: And his answers subject to our motions to strike out, in order that we may not delay the interrogation of the witness at this time, but may have an opportunity to go over the Exhibit and examine it with respect to its materiality.

Commissioner Poor: It may be understood that the company is objecting to the introduction of this Exhibit and reserve this exception.

Q. Go ahead.

A. For the year 1924 the average balance, monthly balance, computed in the same way is $1,370,094.00. For the year 1925 the average monthly balance computed in the same way is $1,274,699.00. For the three years the monthly average computed by adding the monthly averages for the three years and dividing by three is $1,327,963.00, which shows as the last item on the second page of this table.

Q. I call your attention to an Exhibit entitled cash on hand and ask you to state who prepared that, what it is, [fol. 3410] and the sources of the information contained therein.

A. This Exhibit was also prepared by me from the books of the Ohio Bell Telephone and shows the total cash on hand as shown by their balance sheets at the end of each month shown in the left hand side of the table. The monthly balances are shown for each of the three years, 1923, 1924 and 1925, and the average for each year is computed by totaling the twelve monthly balances and dividing by twelve, in the same way as was computed in the former Exhibit of materials and supplies. The monthly average for the year 1923 was $409,518.39. For the year 1924, $456,933.40. And for the year 1925 $570,868.12. The average for the three years being $479,106.00.

This Exhibit was also prepared in connection with the study of working capital, which will *will* be taken up by Mr. McConnaughey later.

Mr. McConnaughey: This Exhibit is offered in evidence, marked Morse Exhibit No. 3.

And thereupon the paper writing above referred to was offered and admitted in evidence on behalf of the State of Ohio and is herewith submitted, marked Morse Exhibit No. 3, and made a part hereof.

Mr. Burr: Note the same objection and exception.

Commissioner Poor: The Commission feels as far as Exhibits Morse Nos. 2 and 3 are concerned, that they should be admitted.

Mr. Burr: Note an exception.

[fol. 3411] Q. I call your attention next to an Exhibit which is entitled, "Employees' working funds." I will ask you to state who prepared it, what it is and the sources of the information and the purpose for which it is prepared.

A. This Exhibit was also prepared by me from the books of the Ohio Bell Telephone Company and sets forth the monthly balance in employees' working funds accounts for each month during the years 1923, 1924, and 1925, showing the monthly averages for each year and the monthly average for the entire three year period. This table was also prepared in connection with the study of working capital.

Mr. McConnaughey: We offer this in evidence as Morse Exhibit No. 4.

Mr. Burr: Note an objection and an exception.

Commissioner Poor: It may be received. Of course, as these Exhibits are being admitted, inasmuch as the witness has testified they were taken from the figures on the books of the company, they are subject to challenge as to accuracy.

Mr. McConnaughey: Oh yes, certainly.

And thereupon the paper writing above offered was admitted in evidence on behalf of the State of Ohio, subject to the objection and exception of the Ohio Bell Telephone Company, and is herewith submitted, marked Morse Exhibit No. 4, and made a part hereof.

Q. Just explain a little more fully what employees' working funds are?

A. Employees working funds cover money held by the [fol. 3412] various district offices and by the employees of the company as working funds, petty cash funds, in other words, and constitute a part of the total cash assets of the telephone company.

Q. State whether or not the amounts that are listed in this Exhibit are included in the Exhibit you have just testified to.

A. The amounts shown in this Exhibit are not shown in the cash shown in Exhibit No. 3.

Q. Now, state the result.

A. The monthly average of employees' working funds in the year 1923 is $133,666.08; for the year 1924, $125,308.29; for the year 1925 $115,458.50. For the three year period the average monthly balance of employees' working funds was $124,811.00.

Q. I next call your attention to an Exhibit which is entitled "Reserve for accrued depreciation from September 21st, 1921 to December 31st, 1925, and ask you to state who prepared it, what it is, the sources of your information, and the purpose for which it is compiled.

—. This Exhibit sets forth the development of the reserve for accrued depreciation from September 21, 1921 to December 31, 1925 by years. It covers the life of the present Ohio Bell Telephone Company from the date of the consolidation in 1921 up to the end of 1925.

Q. What is the source of the information?

A. The information was taken directly from the books and records of the company. It shows that at the beginning of or at the organization and consolidation of the company in 1921, there was a reserve of $6,219,829.18. As [fol. 3413] of December 31st, 1925 this reserve had increased to $12,729,276.17. The table shows first the balance at the beginning of each period as shown in the headings. To this balance are added the credits to the reserve, the first item being the amount charged to operating expenses for depreciation of plant and equipment as computed by the company at the rate of 5.4 per cent on the average depreciable property. That is subject to a note in the period from September 21 to December 31, 1921, when the depreciation was computed on the property of

the Ohio State Telephone Company at the rate of $500,000 a year instead of at the rate of 5.4 per cent.

In addition to the charge to operating expenses for depreciation, there was also a charge to the various clearing accounts as shown in the next line of the table, and from purchase of companies and telephone properties there were taken over reserves which were shown opposite the names of the companies from whom the reserves were taken over. These reserves were added to the reserves on the books of the Ohio Bell Telephone Company. Against the reserve there were charges for plant displaced during each of the periods according to the specification of debit subaccounts carried by the company in accordance with the Interstate Commerce Commission's classification. These debits against each of the sub-accounts are shown in detail for each year.

The increase in the reserve is shown in the next to the last line of the table. During the period from September 21 to December 31, 1921 the reserve increased $1,006,930.00. In the next period, for the year ended December, [fol. 3414] 1922 the reserve increased $2,390,556.89. For the year ended December 31st, 1923, the reserve increased $1,040,996.24. For the year ended December 31st, 1924 the reserve increased $1,167,746.98. And for the year ended December 31st, 1925, the reserve increased $903,216.88.

Mr. McConnaughey: I offer this in evidence, to be marked Morse Exhibit No. 5.

Mr. Burr: Will you please state the purpose of the Exhibit?

The Witness: The purpose of the Exhibit is to show that the reserve for accrued depreciation is growing rapidly, although the Exhibit does show that the increase in the last year is less than it has been in previous years.

Mr. Burr: You mean rapidly, at the rate of about one per cent of the property value?

The Witness: I have not computed that percentage. The reserve has increased in the four years and three months about 100 per cent.

Mr. Burr: Is that the only purpose of the Exhibit?

The Witness: To set forth the information that is contained therein, yes.

Mr. Burr: We object to it.

Commissioner Poor: It may be received.

Mr. Burr: Note an exception.

Mr. McConnaughey: I wish to state on the record with reference to the purpose for which it is offered, while Mr. Morse had no doubt accurately expressed the purpose in his mind in reference to it, when he says that its purpose [fol. 3415] is to show a rapid increase in this fund, as far as I am concerned, it is offered for the purpose of showing what has happened to this fund during this period, both by way of additions and deductions, and it is the basis for some further consideration of the general subject of depreciation which will be offered later in the progress of the case, of which perhaps a rapid increase may be a feature or may not, as may develop.

And thereupon a paper writing above offered was admitted in evidence on behalf of the State of Ohio, subject to the objection and exception of the Ohio Bell Telephone Company, and is herewith submitted marked Morse Exhibit No. 5, and made a part hereof.

Q. I call your attention to another Exhibit which is entitled "Sources and application of funds," and ask you to state who prepared it, what it is and the sources of the information.

A. This report or Exhibit was prepared by me from the latest published annual report of the Ohio Bell Telephone Company, and it sets forth from an analysis of that report the sources of the funds which go to make up the present book value of the fixed capital of the company.

Q. Mr. Morse, may I ask you what annual report of the Ohio Bell Telephone Company you refer to?

A. The printed annual report for the year ended December 31st, 1925.

Mr. McConnaughey: That has been offered in evidence by the company in this case. I cannot recall the Exhibit [fol. 3416] number, but it will be referred to.

Q. You may go ahead.

A. The sources of funds——

Mr. Burr: May it be admitted subject to check?

Mr. McConnaughey: Sure. Of course, all of these are admitted subject to check.

And thereupon the paper writing above referred to was offered and admitted in evidence on behalf of the State of Ohio, subject to the objection and exception of the Ohio

Bell Telephone Company, and is herewith submitted, marked Morse Exhibit No. 6, and made a part hereof.

The Witness: The sources of the funds are shown, first from the sale of capital stock, $73,225,646.88; from outstanding funded debt, underlying bonds and other bonds, $10,312,000.00; advances from system corporations, $7,715,607.94; and from fixed capital reserves, including the reserve for accrued depreciation and the reserve for amortization of intangible capital, amounting to $12,972,534.64; and the surplus of the company amounting to $3,635,138.64.

Q. What is that figure?
A. That last figure?
Q. Yes. What does it represent?
A. That is the total surplus of the company.
Q. No, I mean the $107,860,928.10.
A. The sum of these five sums which I have mentioned, amounting to $107,860,928.10, represents the total capital liabilities and surplus of the Ohio Bell Telephone Company as of December 31st, 1925, and represents the sources, the principal sources of the funds, which go to [fol. 3417] make up the total fixed capital of $107,704,005.35, shown by their balance sheet. In addition to the capital liabilities there were other liabilities amounting to $3,016,126.93, and sundry assets of $2,845,290.26, obtained from these funds, leaving a total fund available for investment in fixed capital and permanent investments other than plant, amounting to $108,031,764.77. Of this $108,000,000, $107,704,005.35 represents the book value of the property and plant account of the property as of December 31st, 1925. The balance, $327,759.42, represents sundry permanent investments not included in the fixed capital.

Mr. McConnaughey: This is offered as Morse Exhibit No. 6.

Mr. Burr: Same objection and exception.

Commissioner Poor: It may be received.

Mr. McConnaughey: That is if the Commission please, all we have ready to offer at this time in this case. The next step is to offer our valuation, which Mr. Hagenah and his assistants have gone back to complete, the preparation of copies and so forth, and it will be ready on Tuesday.

Commissioner Poor: Have you any questions you want to ask Mr. Morse at this time?

Mr. Burr: Not at this time. We would like to take some time to check over Mr. Morse's Exhibit and will determine on cross-examination after that has been done.

Commissioner Poor: We will adjourn this hearing until [fol. 3418] Tuesday Morning, December 14th at 10:00 o'clock.

And thereupon the further hearing of this matter was adjourned to Tuesday, December 14th, 1926, at 10:00 o'clock.

[fol. 3419] Morning Session

Tuesday, December 14, 1926.

And also WILLIAM J. HAGENAH, recalled as a witness on behalf of the State of Ohio, having been heretofore duly sworn, testified as follows:

Examined by Mr. McConnaughey:

Q. Mr. Hagenah, in connection with the investigation of this telephone property——

Mr. Burr: May it be understood that Mr. Hagenah's testimony and exhibits may go in under objection and exception so I won't have to interrupt him?

Mr. McConnaughey: Yes; you are so general in your objections, Mr. Burr.

Mr. Burr: The exhibits are so comprehensive—at least they have been so far, that my limited intelligence cannot take them all in in the limited time allowed.

Commissioner Poor: That may be understood.

Q. Mr. Hagenah, in connection with the investigation of this telephone property, state what you did with reference to the inventory and the valuation of the property? A. I made an examination of the physical property as set forth in the inventory and appraisal report filed by the company and embodied in the exhibits of its witness, Mr. Williams, and I then made an appraisal of the property as reflected [fol. 3420] by that inventory, applying to such inventory unit costs representing the level of labor and material prices which obtained in the State of Ohio as of June 30th, 1925.

Q. What did you find with reference to the inventory? A. The inventory was found to be substantially correct, although there were a considerable number of minor differences; in some instances the inventory quantities being found, on check, to be greater than those contained in the company's appraisal and in other instances they were found to be less. This is explained in part by the fact that some of the inventory data contained in the company's appraisal report was based on appraisals made by the company five or six years ago and brought down to date by the application of results obtained from construction records. Naturally, with the large amount of construction and reconstruction, inconsistencies might readily arise.

The examination of the inventory was confined to the checking of the building data, the central office equipment and the outside plant equipment and construction in the cities of Cleveland, Columbus, Toledo, Dayton and Springfield. I refer now to the checking that was made by a large staff assigned to this work.

I personally examined the buildings, the central office equipment and sections of the physical property in the cities already mentioned, and adding thereto Akron and Youngstown.

[fol. 3421] I personally visited and checked the buildings, central office equipment and parts of the outside plant in all the large cities of the State exceeding 75,000 in population with the one exception of Canton, which was not completed.

Perhaps I should explain in some detail as to how this checking was made and how extensive it was.

We began the checking and carried on our work on a large scale in the City of Cleveland where by far the largest part of this company's property is located. We requested the company to make available for our staff all the inventory details supporting the classified material in the company's appraisal report, and these were submitted in great volume in the company's offices in Cleveland and also in Columbus.

Obviously it was impossible to check the entire inventory, in the preparation of which over a year had been spent by the company and with a staff two or three times as large as that which I could assign to this work in the time available.

To insure an accurate and representative check I requested the company to give us all the details for random sections of the city, and I so designated sixteen sections; in some instances these sections covered a solid square mile of the city; in other instances smaller sections, the area of which was limited by rivers and principal streets.

We took the company's maps and plats and checked each pole and the location of each type and size of cable and [fol. 3422] wire construction in these areas and then tabulated our results and compared them with the results of the telephone company. Frequent discrepancies were found, but generally of minor character, and of this nature; it would appear that the company's inventory engineer, in going down the street and listing the size of poles, had probably become satisfied by the uniformity of the construction, and, in certain sections, ceased to notice certain changes overhead. This was noticeable where the overhead construction crossed railroad tracks or complicated street railway lay-outs, or sometimes where the height of poles was increased or reduced because of other construction in the street, or possibly trees.

The number of such discrepancies as to poles and crossarm construction was rather small.

In some instances the size of the cable had not been correctly read, the outside dimensions being substantially the same, at least noticeably to the eye from the ground, but not indicating the number of pairs contained therein. These errors were in both directions, that is to increase and to diminish the company's inventory.

To test the effect of these changes there was applied to the tabulated inventory quantities, as I found them, the unit costs contained in the company's appraisal and the results were compared with the application of the unit prices to the inventory as it had reported it in its exhibit.

[fol. 3423] The differences in valuation, giving effect to all the changes, both increases and decreases, were in no case greater than 3%, and averaged less than 1%.

Similar checks were made in the City of Columbus where six random sections were carefully examined. In Dayton four sections were examined and in Springfield two sections were examined. These all relate to outside plant. In the City of Dayton the largest discrepancy was in the nature of the finding of more cable than was listed

in the company's inventory. The amount there was rather substantial, involving approximately $30,000.00 worth of cable, and it apparently grew out of an adjustment of the books through the construction and reconstruction of property incident to the consolidation of the two properties after 1921. In terms of percentage, however, this was not large, although it was a material factor in the single exchange area in which it was located.

Examinations were made by checking interior dimensions of over nine hundred manholes. All dimensions were checked and quantity of the material computed. In general our measurements showed slightly less than those contained in the company's appraisal, but in no case was the measurement greater than approximately two inches in the interior measurement.

The greatest difference arose through the checking of the vertical height of the manhole, and that can be explained by the amount of accumulated dirt in the bottom of the manhole.

[fol. 3424] Giving effect to such changes in dimensions and cubical contents in terms of value, the result is so small that it is of no material consequence in the property as a whole.

Some of the discrepancies, noticeably those found in Toledo, grew out of the fact that the company had apparently relied on the accuracy of construction records taken over through the acquisition of The Ohio State Telephone Company. These records were checked against the field and found to contain substantial errors.

Our check in this instance was apparently more thorough than that made by the company.

The weighted average of all the errors in the inventory represent a small fraction of 1% in the property and are so small that they do not involve as large a margin of difference as is present in any computation entering into the ascertainment of reproduction cost.

As a result of this study, which extended over a period of four months with from twelve to sixteen men engaged in the field, I am able to testify that the inventory contained in the company's appraisal is substantially correct and that if it were made in its entirety at one time, instead of accepting the records of the company over a period of five or six years as submitted in its appraisal cases, the result would

not be materially different, and whatever variation would be found, would be as likely to be over as under the figures contained in the valuation exhibit.

[fol. 3425] Q. In this connection you refer specifically to what exhibit that has been filed here?

A. The appraisal exhibit filed by Mr. Williams and marked Williams' Exhibit 7a, 7b and 7c for the three volumes.

Q. What did you do with reference to the valuation of this property, Mr. Hagenah?

A. We requested first that the company submit to us all of its construction data from the date of consolidation of its property with The Ohio State Telephone Company, namely, September 21st, 1921. All completion estimates over this period were checked to June 30th, 1925. These records were in the company's office at Cleveland.

The entire appraisal records compiled by the company's valuation witness, Mr. Williams, and located in its Columbus office, were made available, and regarding the outside plants were copied in substantially the detail in which Mr. Williams had prepared them for final use in building up his unit costs.

To check the reasonableness of the unit costs which were obtainable from the completion reports and estimates maintained in the Cleveland offices and the data compiled by Mr. Williams, correspondence was had and exhaustive information received from The Western Electric Company as to the level of prices which it was charging for telephone equipment and supplies as of June 30th, 1925. This ma-
[fol. 3426] terial was further checked with similar data obtained from The Western Electric Company in other telephone cases before other Public Service Commissions, and further checked with similar quotations from independent telephone manufacturing companies such as The Kellogg Switchboard Company and The Stromburg-Carlson Company.

For the purpose of building up our unit prices for the Ohio appraisal we ascertained a weighted average distance for freight shipments, and found that this rate would be substantially the same as the rate from manufacturing points west of Ohio to the City of Columbus.

The prices used represent the purchasing of materials in the volume and quantities required for an undertaking

such as the reproduction of this company's property, and included the freight to Ohio, the warehousing expense, the cost of freight and cartage or local distribution charges in Ohio, the scale of wages paid by the company as of the inventory date, the form of organization maintained by the company for large construction undertakings, the allowance over direct labor for supervision expense and for tool expense.

The unit costs were designed to reflect costs which the company would incur in the reconstruction of its property under a continuous construction program using the methods of construction and equipment ordinarily used in such large undertakings and assuming that proper financial arrangements had been made for the continuous prosecution of such [fol. 3427] a reproduction or construction enterprise. The unit costs, therefore, differ materially in regard to the outside plant costs from those used by both witnesses on behalf of the company, whose data reflected largely the costs of the company as its construction work is carried on under what is known as piecemeal methods, the unit costs being the average of a large number of relatively small construction undertakings. Some are large in the absolute, but in relation to the reconstruction of a property of over $100,000,000, they take on a very minor significance.

For this reason, the unit costs used in my appraisal are materially lower for all those classes of property where the company's witnesses used piecemeal construction.

As opposed to piecemeal construction units I have endeavored to use units which reflect continuous reproduction for the property under one construction program.

Q. What was the result of your investigation as to the value—the reproduction cost?

A. I find that the reproduction cost of the physical property as of June 30th, 1925, including over-head charges, is $112,613,847, and that such reproduction cost new, less the existing depreciation found in the property as of the inventory date, was $97,582.375. This amount is exclusive of working capital and going concern value and the miscellaneous investments of the company in property not used and useful on the inventory date. [fol. 3428] The allowance for working capital is $3,500,000 and for going concern value $11,260,000, which two items have been added in both the reproduction cost new

column and the so-called present value column without deduction for depreciation.

The investment in miscellaneous property, such as land and buildings not used and useful, represents substantially $195,000, consisting of land to the amount of $63,796 and buildings to the amount of $131,914.

No attempt has been made to ascertain the depreciation in these investment buildings because they do not enter into the rate base and are not matters in issue in this case.

Q. These values are as of what date?

A. They are as of June 30th, 1925.

The reproduction cost of all the property used and useful in the telephone service as of the inventory date is $127,373,847 and the so-called present value is $112,342,375.

Including the miscellaneous investments, the total value of the property, reproduction cost new and present value is $127,569,557 and $112,538,085 respectively.

Q. Have you embodied the result of your investigation in an exhibit?

A. I have.

Q. I show you an exhibit which is entitled "The Ohio Bell Telephone Company, inventory and appraisal for the Public Utilities Commission of Ohio, Columbus, Ohio, 1926," and ask you what that is?

A. That is a copy of the complete inventory and appraisal [fol. 3429] report representing my findings as to the reproduction cost or reproduction cost less depreciation, of the company's property as of June 30th, 1925.

Mr. McConnaughey: This exhibit is offered in evidence as Hagenah exhibit number 2.

Mr. Burr: Subject to the objection heretofore stated.

Commissioner Poor: The objection will be overruled and the exhibit will be received.

Mr. Burr: Note an exception.

And thereupon the document last above referred to is admitted in evidence on behalf of the State of Ohio subject to the above objection and exception of The Ohio Bell Telephone Company and is herewith submitted and marked Hagenah exhibit number 2.

Q. I call your attention to another exhibit which is entitled "The Ohio Bell Telephone Company, comparison of appraisal results June 30th, 1925," which embodies three

columns of figures headed "G. B. Williams, W. F. Sloan and W. J. Hagenah" and ask you to explain what that exhibit is?

A. This exhibit, which is marked Hagenah exhibit number 3 as of this date, shows, in parallel columns, the valuation findings contained in the reports filed by Messrs. Williams and Sloan and the results embodied in my own appraisal report in exhibit number 2 of this date. All three are on the same basis of classification of accounts and reflect [fol. 3430] the reproduction cost new of the property as of June 30th, 1925.

Adjoining each column of valuation results is a separate column showing the per cent condition found by each appraiser for each class of property expressed in terms of percentage of one hundred as new.

Q. Where are those figures taken from—the per cent condition figures, I mean?

A. They are taken from the respective appraisal reports filed by the three appraisers.

Mr. McConnaughey: This exhibit is offered in evidence as Hagenah exhibit number 3.

Mr. Burr: Subject to the same objection heretofore stated.

Commissioner Poor: The objection is overruled and the exhibit will be received in evidence.

Mr. Burr: Note our exception.

And thereupon the document last above referred to is admitted in evidence on behalf of the State of Ohio subject to the above objection and exception of The Ohio Bell Telephone Company and is herewith submitted and marked Hagenah exhibit number 3.

Q. Mr. Hagenah, will you take Hagenah exhibit number 2 and explain it in detail, taking up the accounts in their order and stating how you arrive at the value which is set [fol. 3431] forth there?

A. The first account appearing in my appraisal report, exhibit number 2, covers the item of right of way. I am referring now to the summary of the appraisal appearing on page 2 of that exhibit. This is also the first item in the appraisals made by Messrs. Williams and Sloan.

I find the right of way expense or cost to be $1,565,764. This is approximately $360,000 less than Mr. Sloan's find-

ing of the reproduction cost for the same item and $380,000 less than the figure for this item by Mr. Williams.

Mr. Sloan stated as his basis an allowance of 3% of the reproduction cost of the outside property accounts in both the exchange and toll service to which the account of right of way expense is related.

Mr. Williams' finding is based largely upon an allowance per pole and other units of physical construction in the outside plant.

My studies of the right of way cost incurred by The Ohio Bell Telephone Company and compared with the right of way costs of other telephone companies, operating under substantially the same conditions, indicates that the allowance by Mr. Williams is too high when considered as an average for the State as a whole. His units relate more accurately to the conditions obtaining in the city of Cleveland particularly and Columbus and Toledo as cities in the second group.

[fol. 3432] The right of way expense is probably higher in Cleveland than in any other city of approximately one million population in the United States. Because Cleveland is largely without alleys in the laying out of streets, it is necessary to obtain permits for the construction of poles and building contacts and running of lines to a larger degree in that city than in any other large city with which I am familiar.

The conditions obtaining in Toledo, Columbus and Akron are typical of metropolitan centers.

I think Mr. Williams has not reduced his unit sufficiently to cover the substantial amount of over-head construction in the smaller cities and in the toll lines along highways.

The relationship which Mr. Sloan works out in terms of percentage is substantially right as a relationship, but I differ from his figures in the fact that my reproduction cost of the outside plant is substantially lower than his because I have used reproduction costs on large scale construction, whereas his units, in my judgment, reflect more nearly piecemeal construction.

The book cost of the right of way of The Ohio Bell Telephone Company as of December 31, 1925, is $1,309,676 or $260,000 lower than the figure which I have used.

An analysis of the company's books indicates that its right of way cost as shown by the books is not a correct

reflection of the expenditures which have been made. This statement is supported by the books and records of a large [fol. 3433] number of independent telephone companies which have been absorbed into the present, The Ohio Bell Telephone Company.

For many of these companies, as will appear from their details of construction costs embodied in Hagenah exhibit number 1 no right of way expense is shown at all, these costs having undoubtedly been merged with the construction costs of poles, wire and cable.

In some instances, at the time of transfer, appraisals were made and an attempt made to segregate the properties as shown by the book costs over the classified items disclosed by an appraisal. This was rather a short cut method and as a result, the item appearing on the books as of December 31, 1925, is to some extent incomplete, and in other respects is an arbitrary apportionment and for that reason cannot be accepted as a correct index of the right of way expense actually incurred at the time these rights were obtained.

The relationship of this right of way expense appearing on the company's books with outside plant costs is also an unwise guide, because the book cost of many of the accounts covering outside construction is in excess of the present reproduction cost, in spite of the fact that the construction work was, to a large degree, incurred on a price lever lower than that which obtains at the present time.

This discrepancy is also explained by the fact that at the time of the different mergers an attempt was made to [fol. 3434] segregate the property more nearly according to the classification of accounts now followed as an aid for the determination of proper depreciation charges. They were probably made with as close a degree of accuracy as the material then available made possible.

Q. Mr. Hagenah, will you identify a little more completely the items that you are now referring to as showing the book cost higher than the reproduction cost?

A. I am referring to the book cost of The Ohio Bell Telephone Company as of December 31, 1925 where it appears in classified form on page 35 of Hagenah exhibit number 1. These items appear in the last column on the righthand side of the page.

From my own studies I am satisfied that 3% is a rea-

able allowance for right of way expense under the conditions which my inspection of the property has disclosed.

Q. 3% of what?

A. That is 3% of the appraised value of the outside plant accounts for the benefit of which right of way expenditures must be made. This results in an allowance of $1,565,764 in my appraisal and I do not depreciate that item. It appears in both columns as 100% condition.

Q. Now what accounts have you based that 3% upon?

A. It is based on the following accounts; exchange pole lines, exchange aerial wire, exchange aerial cable, exchange underground conduit, exchange underground cable and exchange submarine cable.

[fol. 3435] The toll accounts are as follows: toll pole lines, toll aerial cable, toll aerial wire, toll underground conduit, toll underground cable and tol submarine cable.

The total reproduction cost for these several accounts as they appear on page 2 of Hagenah exhibit 2 is $52,192,147, on which 3% is $1,565,764, or the item to which I have referred.

Q. Now take up the item of land and buildings and tell how you have handled that in this appraisal?

A. On the completion of the telephone company's appraisal evidence covering the value of its land, a circular letter was addressed to the City Attorney of all the large cities in Ohio, and that included as I recall, every community having a population in excess of twenty-five thousand. The representatives of the cities were instructed to acquaint themselves with the valuations testified to on behalf of the company and the standing of the real estate brokers whose judgment was reflected therein in practically every instance where replies were received the letters indicated that the brokers were men standing in high repute in their communities and that there was no disposition to take issue with the values which they had found.

As a result of this correspondence I have accepted the same values for the land account as is contained in the reports of both Messrs. Williams and Sloan.

Regarding the building account it will be noted from Hagenah exhibit 3 that I have also accepted the company's estimate of the reproduction cost of this class of property. [fol. 3436] Before this result was accepted, however, two

building engineers from my office were sent to Cleveland where, on request, they were supplied with the detailed information compiled by the company's witnesses covering twenty-eight different buildings which were selected at random. We examined the entire bill of materials for each building and checked it against the plans and specifications in the possession of the company. For the major buildings these plans and specifications as well as bills of materials, were checked against the buildings as they were found to be on the inventory date. This was done for the purpose of ascertaining whether any additions or removals had taken place with respect to any of the buildings, so that corrections could be made.

The results thus obtained were submitted to contractors in the larger cities of the State who were told to pass on the reasonableness of the estimated costs that the company's witnesses had used for the construction of the buildings.

In some instances three different contractors were engaged in the different cities, some covering the cost of making excavations and removal of earth, the construction of concrete and brick foundations and costs covering the erection of steel, the pouring of concrete in superstructures, and the placing of brick walls, roofing, plumbing and wiring.

In two cities differences of opinion arose as to the accuracy of the company's units. An attempt was made to [fol. 3437] reconcile these views and it was found that the estimates which were supplied by the cities related more to the construction of the average industrial or mercantile building than for telephone buildings wherein the construction is much heavier. A telephone building must be designed to support a much larger weight per square foot than the ordinary mercantile building.

These contractors in arriving at their opinion had taken the cubical contents of the telephone buildings and appraised them by applying to such contents the usual cubic foot cost of commercial buildings. When their attention was directed to the greater weight in steel and concrete and thickness of walls and the necessity for such construction also on account of temperature regulation, their positions were modified. One contractor stated that he thought the building costs in his city were lower than he would wish to undertake to erect them.

The general result of this examination, which extended over a period of four months including the correspondence with contractors, led me to accept in total, the reproduction cost of the buildings as determined by the building men who testified on behalf of the company.

The central office equipment account appearing next on page 2 of Hagenah exhibit 2, and being the fourth item in Hagenah exhibit 3, represents entirely the purchase price of materials supplied by The Western Electric Company or other large manufacturers specializing in that type of equipment set forth in the company's inventory. This [fol. 3438] equipment is not of the quantity production type which can be manufactured in large amounts and stored in warehouses to meet seasonable demands. It is made from time to time on special plans and specifications to meet specific needs.

There is little competition in this field. Much of it is controlled by patents.

The only evidence as to the reasonableness of the quotations lies in checking the costs of substitute and as nearly similar equipment as is obtainable from other manufacturers.

The purchase of telephone equipment narrows itself down to a proposition of purchasing it from the larger manufacturer or accepting equipment which The Bell Telephone Company does not regard as standard in its service.

The margin of profit and general operating results of The Western Electric Company supplying this equipment in by far the largest quantity, can be compared generally with the margin of profit of The United States Steel Corporation, The Westinghouse Electric Company and The General Electric Company. And there is nothing to indicate in the reports to the financial centers or reports on such properties by financial analysts that these quotations are unreasonable or that the margin of profit resulting therefrom is out of line with that of other successfully conducted large industries in the United State-.

I am compelled to accept the account covering the central [fol. 3439] office equipment, being satisfied that it is the most reasonable series of quotations that would be obtainable in the construction of an undertaking of this size on the inventory date.

Q. Now will you state what that figure is?

A. The reproduction cost of the central office telephone equipment is $16,956,131.

Q. As of June 30, 1925?

A. Yes, sir.

Q. Now take up the next item "Other equipment of central office."

A. This account covers substantially equipment obtained from The Western Electric Company and companies supplying independent telephone equipment of the same kind. The unit costs are in a great majority of instances, the same as those contained in Mr. Williams' exhibit and have been verified by correspondence with The Western Electric Company and the checking of its discount list to The Bell subsidiaries. In a few instances the unit cost was lower because there we used the price which had been supplied in connection with certain undertakings involving the purchase of a larger volume of property than that involved in the specific accounts for this company.

Q. Mr. Hagenah, I think you have not heretofore connected your testimony with the paging in Hagenah exhibit number 2. Perhaps you better do that for the record.

A. My exhibit number 2 consists of 137 pages in which there appear the supporting details for the summary set forth on page 2.

[fol. 3440] A statement as to the right of way account appears on page 3 of Hagenah exhibit number 2.

Details of the land account appear on pages 4 to 12 inclusive.

The account covering buildings appears on pages 13 to 25 inclusive.

The account "Central office equipment" is supported by details extending over pages 26 to 46 inclusive.

The account last described and entitled "Other equipment of central offices" appears on page 47.

Q. Now in your statement with reference to other equipment of central offices you confine your statement pretty largely to material furnished by The Western Electric Company. I wonder if that covers that item?

A. It does.

Q. Are there not general furniture items included in the schedule that are not furnished by The Western Electric Company?

A. There are. They can be obtained under the general contract with The Western Electric Company or can be

purchased locally. As to some of the items the matter is left to the judgment of the local manager, and we have taken lower prices where we could obtain them. The difference, however, is very small.

Q. Now I notice a difference of some several thousand dollars between your total appraisal of that item "Other equipment of central offices" and the other two appraisals; what is the explanation of that difference if you have any?

A. The difference is $12,000.00 as compared with Mr. [fol. 3441] Williams' appraisal and is due to lower prices obtained for certain office equipment.

Q. Now take the next item "Station apparatus"?

A. The next item is "Station apparatus," the details of which appear on page 48 of Hagenah exhibit number 2.

My appraisal results for this item are somewhat higher than Mr. Williams' and lower than Mr. Sloan's. This difference is due to the development of unit costs for labor and material which exceed, in the labor item, the costs which Mr. Williams used and are substantially less than those used by Mr. Sloan. It is largely a matter of classification. Apparently Mr. Williams has included certain of these accounts in other property accounts or has attempted to cover some of the items which I have charged to my direct costs in his over-head allowances. The prices which I have used are based on the market price, on quantity purchased for the items in question and the application hereto of labor costs shown by this company and other telephone companies in similar installation work.

Q. And the total figure that you find is what?

A. Is $5,749,956.

Q. Which represents what?

A. The reproduction cost of this class of property as of June 30th, 1925.

Q. Now take the next item "Station installations."

A. The details of this account appear on page 48 of Hagenah exhibit 2 and result from the application to the number of stations of the unit cost of $3.90 which is developed from independent studies made by us from the [fol. 3442] records of this company. The total for this account is $2,034,423 as the reproduction cost.

Q. Now take the next item "Interior block wires."

A. This account is a very minor item, representing a reproduction cost of only $83,881 and is substantially the same as the amount used by Mr. Williams but somewhat

less than Mr. Sloan's estimate. The difference in my report as compared with Mr. Williams is due to the inclusion in the unit cost of some minor equipment or materials which he has apparently included in some other cost. The difference is one of classification or determining the points of separation.

Q. Now the next item "Private branch exchanges."

A. This account, representing a total reproduction cost of $3,384,995 is substantially the same as the item allowed for this account by Mr. Williams. The material is practically all Western Electric or other standard telephone equipment. The difference here is a very minor one and is accounted for I believe in one or two typographical errors in some of the notes from which we worked, and it may be that through handling they have become slightly blurred and have been misread. The difference is insignificant. The details of this account are found from page 50 to page 60 inclusive.

Q. Of Hagenah exhibit number 2?

A. Of Hagenah exhibit number 2, yes; that is right.

Q. Now the next item is "Booths and special fittings."

A. This account, representing a reproduction cost of [fol. 3443] $167,201 is practically all Western Electric or standard telephone equipment, for which there is one recognized market price. Whatever variations may develop between the different appraisers is one of labor cost or possibly an allowance for freight and cartage. There can be no material difference in this account. The details appear on page 61 of Hagenah exhibit number 2.

Q. And the figure is what?

A. $167,201.

Q. The next item is "Exchange pole lines."

A. This account represents in my report a reproduction cost of $9,412,432. There is a very marked difference between this account and the result shown by Mr. Williams and Mr. Sloan. My figure is $1,800,000 less than reported by Mr. Williams and $2,200,000 less than the figure reported by Mr. Sloan.

In comparing the unit costs which Messrs. Williams and Sloan have used with the costs which they have compiled from the estimates and completion reports of the company and my own unit costs I find that the difference grows out of the allowance for labor in the installation cost. There is no material difference in the material prices since, as

obtain the benefit of the large purchases which The Western Electric contract affords, I have used the same price for poles and pole accessories as have Messrs. Williams and Sloan. But my labor cost is materially lower and grows out of the fact that I assume that my construction gang is working under a continuous program such as the company itself follows in large scale construction.

[fol. 3444] The unit costs compiled directly from the company's reports are the averages of all costs compiled from a comparatively small number of estimates in which the amount of work performed ranges from a very few poles to over one thousand poles and in each case there has been charged against the estimate all the labor and incidental labor expenses due to such a detached undertaking, beginning with the preparation of the estimates and going from the storehouse to the work and back again.

The cost of going to and from the work, transporting the men, and the use of the equipment incidental thereto is practically a fixed expense and is the same whether ten poles or whether twice that number of poles are installed. Consequently, the larger the amount of work performed per day with such an organization, the smaller is the resulting labor cost because there is a larger number of completed units over which the fixed labor items can be distributed.

The allowance for labor contained in my appraisal for these units checked almost exactly with the average computed from the company's work orders as these studies are confined to the largest jobs which more nearly approximate reproduction conditions.

As to the details of this account and the other accounts involving outside plant construction, our unit costs are available and Mr. Dorsey, associated with me as chief engineer and in charge of the detailed unit cost work, will present these comparative studies as a part of the testimony in support of Hagenah Exhibit Number 2.

[fol. 3445] The details of this account appear on page 62 of Hagenah Exhibit 2 and this, as stated, will be supported by further exhibits elaborating the method by which these unit costs have been computed on the theory of continuous and large scale construction.

Q. Did you state the amount of that item, Mr. Hagenah?

A. Yes, sir.

Q. I think you did. Now take the next item which is "Exchange aerial cable."

A. This account represents a reproduction cost of $8,055,194.

Q. As found by whom?

A. As appear- in the summary on page 2 of Hagenah Exhibit 2 and is supported by details on pages 63 to 68, inclusive, in Hagenah Exhibit 2.

The result which I reached for this account is $1,654,000 less than the amount found by Mr. Williams, and approximately $1,130,000 less than that found by Mr. Sloan.

The difference here is accounted for by the different appraisal bases on which the several appraisers have proceeded.

It is my judgment that both Messrs. Sloan and Williams proceeded on what I regard as the piecemeal construction method rather than continuous reproduction such as, according to my definition of reproduction cost, would be encountered or experienced by the Company.

We have used the same material prices in each case so that the difference in the final value is reflected in the different labor costs used. And the labor costs in support of this account in my appraisal will be further supported [fol. 3446] by unit cost studies to be presented by Mr. Dorsey.

Q. Take the next item "Exchange aerial wire" and discuss that.

A. This account represents a reproduction cost of $4,556,220, the details of which appear on pages 69 and 70 of Hagenah exhibit number 2.

For this account my valuation result is substantially 10 per cent less than that found by Messrs. Williams and Sloan. Here again the differences explained by the different bases used. It is my judgment that Messrs. Sloan and Williams used the piecemeal construction method as opposed to continuous construction. We used in each case the same basic material prices and the difference is reflected in lower labor costs which result under the continuous construction theory.

The unit costs reflected in Hagenah exhibit 2 will be supported on this subject by further exhibits to be presented by Mr. Dorsey.

Q. Take the next item, which is "Exchange underground conduit."

A. This account represents a reproduction cost of $9,386,032 and the details appear on pages 71 to 88 inclusive of Hagenah exhibit number 2.

The comparison of the three appraisal reports reveals at this point the widest difference which is present in any of the physical property accounts.

Mr. Williams' valuation for this item is $3,900,000 more than my valuation and Mr. Sloan's is $3,800,000 higher than my figure.

[fol. 3447] Here again I believe the difference is explained by the fact that Messrs. Williams and Sloan are using piecemeal construction units instead of continuous construction units and our difference is, therefore, a matter of definition of what constitutes proper reproduction cost of property as of a date certain.

The unit costs set forth in my report on the pages mentioned will be supported by further cost studies to be testified to by Mr. Dorsey.

Q. Now the next item is "Exchange underground cable;" please discuss that?

A. This account represents a reproduction cost of $9,810,730. The details appear on pages 89 to 107 inclusive.

There is a considerable margin of difference between my report for this account and the results reached by Messrs. Williams and Sloan.

Mr. Williams' results are $2,230,000 greater than my figure, while Mr. Sloan's is approximately $2,100,000 higher. This difference is, in my judgment, explained by the use by Messrs. Williams and Sloan of piecemeal construction costs as opposed to continuous construction costs.

The units which I have used will be supported by further testimony.

Q. What is the figure that you find for that item?

A. $9,810,730.

Q. The next item is "Exchange submarine cable."

[fol. 3448] A. That is a relatively small item of $19,730, the details of which appear on page 108 of Hagenah exhibit number 2.

There is really no difference between Mr. Williams and myself on this subject.

Mr. Sloan's item is less than half of the value shown by Mr. Williams and myself and is a matter of classification.

Q. What is your figure on that item?

A. $19,730.

Q. The next item is "Toll pole lines"; please discuss that?

A. The reproduction cost of the toll pole lines as of the inventory date is $6,108,489. The details for this account appear on page 109 of Hagenah exhibit number 2.

My figure is $1,600,000 less than Mr. Williams' conclusion and $1,760,000 less than Mr. Sloan's conclusion. This difference is in my judgment again explained by the use of piecemeal construction units on behalf of the company as against continuous construction units in my report.

Q. What is your figure for that item?

A. $6,108,489.

Q. The next item is "Toll aerial cable;" please discuss that?

A. This account shows a reproduction cost of $536,254. The supporting details appear from pages 110 to 116 inclusive of Hagenah exhibit number 2.

My figure is substantially $65,000 less than Mr. Williams' figure and $75,000 less than Mr. Sloan's figure.

These differences are again explained by the apparent use of piecemeal construction in the reports filed on behalf of the company as compared with continuous construction [fol. 3449] cost estimates.

Q. Now take the next item "Toll aerial wire" and discuss that?

A. The reproduction cost of this account is $3,842,664, the details of which appear on page 117 of Hagenah exhibit 2.

My conclusion is approximately $510,000 less than Mr. Williams' figure and $260,000 less than Mr. Sloan's figure for the same property. The explanation is similar to that which has been given for the immediate foregoing accounts.

Q. Now the next item is "Toll underground conduit;" please discuss that item?

A. The reproduction cost for the property represented by this account in my report is $30,490. The details appear on page 118 of Hagenah exhibit 2.

This cost is $15,000 less than Mr. Williams' finding and $19,000 less than Mr. Sloan's finding.

The difference is again the difference in the methods used as piecemeal construction opposed to continuous construction. The units are substantially the same as those explained in connection with the preceding account of exchange underground conduit wherein the widest difference in the unit costs developed.

Q. Now the next item "Toll underground cable?"

A. The reproduction cost for this item in my report is $421,257. The details appear on pages 119 to 130 inclusive. My figure is nearly 11 per cent lower than that found by Mr. Williams, or a reduction of $51,000. It is $78,000 less [fol. 3450] than the figure for the same property found by Mr. Sloan.

This difference is explainable again by the different appraisal bases or sources of data used in the different reports.

Q. The next item is "Toll submarine cable;" please discuss that?

A. My figure for this account is $12,652. The details appear on page 131 of Hagenah exhibit number 2.

My unit costs are the same as those used by Mr. Williams and we have the same final value for this item.

Mr. Sloan's figure is approximately one-half of that reached by Mr. Williams and myself and again represents a different classification.

Q. Now take the next item which is "Office furniture and fixtures," and discuss that?

A. The account "Office furniture and fixtures" indicating a reproduction cost of $576,083 is the same item and the same value as appears in Mr. Williams' report. The details for this account appear on page 132 of my report, and since there was no difference between Mr. Williams' report and mine on this subject, the large volume of supporting data have been omitted.

The prices for this equipment were checked in Mr. Williams' report against the supply houses and manufacturers from which they were obtained and it was the judgment of these parties that the unit costs used in the Williams' report were reasonable.

Mr. Sloan's figures are nearly $50,000 higher than Mr. Williams and myself.

[fol. 3451] Q. Now take the next item "General store equipment;" what have you done with that?

A. This account shows a reproduction cost of $17,555, the details of which are referred to on page 132 of Hagenah exhibit number 2.

I have, after checking Mr. Williams' unit costs, accepted them on proof that they were correct.

Mr. Sloan's figures are slightly higher.

Q. Take the next item "General stable and garage equipment"?

A. This account shows a reproduction cost of $570,998. The details are referred to on page 132 of Hagenah exhibit number 2.

My figure is the same as Mr. Williams, in fact, having checked his units on which his conclusion is based, I agree that they accurately set forth the fair prices.

Q. And what have you to say as to the next item "General tools and implements?"

A. The same explanation as just made holds true for this account also. The reproduction cost is $384,364 and is referred to on page 132 of Hagenah exhibit number 2.

I have, for this account, accepted Mr. Williams' unit prices after verifying their accuracy.

For this account and also for the two immediately preceding I have eliminated the details since there was no dispute regarding them. They can be supplied if desired.

Q. Now there is an item on Hagenah exhibit number 3 shown under the column representing the Williams' and Sloan's appraisals under the title of "Undistributed construction expenditures," which you have not listed in your [fol. 3452] appraisal; why has that been omitted?

A. That is a matter of classification and has not been included in my specific construction items. This item appears in Williams' exhibit number 9 filed January 28th, 1926, as "Miscellaneous construction expenditures," and not included in the amount on which his over-head expenditures are applied. It is not a criticism but it is a matter of rearrangement.

Q. Now what is the total of all of these items, Mr. Hagenah?

A. I find a reproduction cost new of the physical property exclusive of any items for over-head charges and therefore including only direct labor and material prices, of $96,045,925. This compares with the corresponding finding by Mr. Williams of $108,813,366 and the finding by Mr. Sloan of $108,843,642.

It will be noted that my finding for the direct physical items alone is approximately $12,800,000 below the finding of either of the appraisals on behalf of the company.

Q. And what does that figure of $96,045,925 represent?

A. That is the reproduction cost new or without deduction for depreciation, covering only the direct labor and

material prices, to which no additions have been made for any over-head or indirect construction charges.

Mr. Postle: As of what date?

The Witness: As of June 30th, 1925.

By Mr. McConnaughey:

Q. Mr. Hagenah, Mr. Postle calls my attention to the [fol. 3453] fact that in your testimony in reference to general stable and garage equipment you stated that the value which you find there was the price of that equipment; do you intend to use that word "price"?

A. Not in the sense as the purchase price. It was a fair price for the equipment that would have to be paid in the open market on June 30th, 1925 if purchases were made under the specifications and in such quantities as The Ohio Bell Telephone Company does purchase.

Q. Now what over-heads should be added to this specific construction cost in order to determine the total reproduction cost new value of this property as of June 30th, 1925, in your judgment?

A. An allowance should be made for all the indirect or over-head expenses that must be met in the construction of such a property, beginning with the preliminary engineering and carrying the work through to its completion. This would involve such major items as general engineering during construction, administrative expense during construction, taxes on land and completed property during the construction period, an allowance for contingencies, casualties and omissions from the inventory and for cost items in the unit costs; an allowance for injuries and damages incidental to construction work and for interest during the construction period.

Q. And as applied to this property what have you found with reference to these items of value?

A. I have included in my appraisal, marked Hagenah exhibit number 2 and referring to page 2 of that exhibit, [fol. 3454] an item, for over-head allowances amounting, in the reproduction cost new column, to $16,567,922. This consists of four major items as follows:

Engineering, $5,762,755.

Administrative, legal and taxes during construction, $1,630,904.

Injuries, damages and insurance during construction, $480,230.

An allowance for contingencies, casualties and omissions, $2,401,148.

Interest during construction, $6,242,985.

These items are not exactly the same in terminology as those used by Messrs. Williams and Sloan.

There appears on Hagenah exhibit 3 the corresponding over-head allowances made by the two appraisers on behalf of the company.

It will appear from analysis that the difference in the three appraisal reports is largely one of terminology rather than of substance, for apparently all three have endeavored to cover the same class of costs in the allowances made.

It is also interesting to note that if the same method of application is followed, that there is a very close agreement in the provisions for over-head charges.

The allowance of Mr. Sloan in terms of percentage is but a fraction of a per cent different from that which I have allowed in my report.

[fol. 3455] Mr. Williams departs somewhat from the other two reports in the method in which he applies his over-head charges. Instead of applying them directly as separate items as was done by Mr. Sloan and in my own appraisal, Mr. Williams applies his cumulatively with the result that the application of the same percentage as was used in the other appraisals results in a larger amount in terms of dollars. Had Mr. Williams used the direct application of his percentages for over-heads, his total percentage would have been somewhat lower than the percentage which I have added. But by making his percentages cumulatively, he obtains a larger, or applies a larger total over-head than is contained in either of the other reports.

While my addition for over-head charges is $16,567,000, it is substantially less than the amount allowed by either Messrs. Williams or Sloan. Mr. Williams' allowance is $3,500,000 more than mine and results from the fact that he has applied his units cumulatively, and secondly, that he applies his percentages to a much more larger base value than I do.

Mr. Sloan's figure exceeds mine by approximately $2,000,000 and grows out of the fact that he applies his percentages to a larger base figure than I do, this base figure

both Mr. Williams' and Mr. Sloan's report exceeding mine because I feel that both have used piecemeal construction unit costs in their outside plant construction as against continuous construction plans.

[fol. 3456] It is interesting to note that where the three appraisals proceed along the same principles, methods or bases of construction, there is no wider difference of opinion than is usually found among men equally informed and dealing with the same subject as would be found by contractors estimating on the same building from the same plans. Our differences arise, therefore, from the methods that have been used in regard to certain accounts. Had we all estimated on a continuous construction program, I am satisfied that the difference in the reproduction cost of physical property would be very much reduced.

Adding the over-head charges to which I have testified I find the reproduction cost of the physical property alone without deduction for depreciation as $112,613,847 as of June 30th, 1925. This is $15,200,000 less than Mr. Williams' figure and $14,700,000 less than Mr. Sloan's figure.

Q. Now will you discuss the classification of these over-head items and explain why you have classified them as you have?

A. The classification of over-head charges does not follow any specific instructions in any one classification of accounts. It grows largely out of the individual experiences and performances of the appraisers. They are, however, all dealing with substantially the same thing. The different terminology in the three reports can therefore be ignored, because we are all trying to do the same thing and we have accomplished it in substantially the same measure and by substan-

[fol. 3457] tially the same method with the one exception that Mr. Williams has applied his units for over-head charges cumulatively.

Q. Now what does the figure, $112,613,847 represent?

A. That is the reproduction cost new without deduction for depreciation of the physical property including over-head charges as of June 30th, 1925, on the theory of continuous single plan construction program under which the company would proceed, without interruption, using the methods of construction developed for large scale work in the telephone field, and on the further assumption that ample financial provision had been made for continuing such work.

Q. Now what items, if any, should be added to that total in order to determine the reproduction cost new of the property as a working unit, as a complete whole operating as a telephone plant; that is the idea that I have in mind?

A. What we are seeking to appraise is not merely a physical plant as of the inventory date but that kind of a plant with its attached business, or the telephone utility in its entirety as it was actually operating, giving service on June 30th, 1925. To reflect such a condition it would be necessary to add to the reproduction cost of the physical property an allowance for working capital and for going concern value.

Q. How have you handled the item of working capital in your appraisal?

Commissioner Poor: Before going into that item, we will [fol. 3458] recess until 1:30 o'clock.

And thereupon a recess was taken until 1:30 o'clock P. M. of same day.

[fol. 3459] Afternoon Session

Tuesday, December 14th, 1926.

And also William J. Hagenah, resuming the stand for further examination in chief, continued his testimony as follows:

Examined by Mr. McConnaughey:

Q. How have you handled the item of working capital in your appraisal?

A. The correct allowance made for working capital for any particular company at a specific date cannot be determined by one method of analysis alone. It must necessarily be a judgment figure based on a study of all the factors bearing on the subject of working capital, and in the final conclusion weight must be given to the different evidences of value according to the degree in which they are present at the particular time.

There are five more or less well-known methods that have been used by Commissions and approved by Courts in rate making cases covering the allowance for working capital.

In order that the record might show the results of such studies as apply to this property under each method, I have developed the five methods and show the results that were obtained in this case following each. I have prepared an exhibit setting forth the results according to these five

methods, and also showing my judgment figure as to the [fol. 3460] proper working capital of this company after giving effect to the five results obtained from these several studies.

Q. Is the exhibit which I show you, and which is entitled "The Ohio Bell Telephone Company Working Capital 1925", the exhibit to which you referred?

A. It is.

Mr. McConnaughey: We offer this document in evidence as Hagenah Exhibit No. 4.

Mr. Burr: We object to its admission.

Commissioner Poor: Objection overruled.

Mr. Burr: Note an exception.

And thereupon the Document last above referred to is admitted in evidence on behalf of The State of Ohio, subject to the above objection and exception of The Ohio Bell Telephone Company, and is herewith submitted and marked Hagenah Exhibit No. 4.

Q. Now, Mr. Hagenah, will you discuss that exhibit as you think proper, explaining the various features of it?

A. Hagenah Exhibit No. 4 shows I have arrived at my final allowance to cover working capital of The Ohio Bell Telephone Company as of June 30th, 1925. I have included in my appraisal for this item the sum of $3,500,000.00. It is based on a consideration of the various measures of working capital that have been developed and used in different cases. These five methods are set forth in Exhibit No. 4. [fol. 3461] The first method is commonly referred to as Excess of current assets over current liabilities as of the valuation date.

The balance sheet in evidence in this case nearest June 30th, 1925, and reflecting the necessary adjustments at the close of a year, is that as of December 31st, 1925, and set forth in the balance sheet contained in Hagenah Exhibit No. 1 at pages 6 and 7.

I show in Exhibit No. 4 the current assets consisting of the following four items:

Cash and deposits	$663,457.81
Accounts receivable	$2,192,901.04
Marketable securities	$153,650.00
Materials and supplies	$1,403,783.21
Or, total current assets	$4,413,792.06

As opposed to this I show the one item of current liabilities appearing in the balance sheet as accounts payable. This amounts to $1,578,093.18.

The excess of current assets over current liabilities as thus determined was on December 31st, 1925, $2,835,698.88.

This method standing alone would not properly measure the working capital of this Company because the material and supply accounts fluctuate substantially throughout the year, as does also the largest single current asset account, known as accounts receivable.

Q. Just a moment before going to the next method; explain for the record the reason for and the purpose of an [fol. 3462] allowance in the valuation for working capital?

A. It is necessary for any operating company to have capital tied up in current operating accounts. This is necessary for and incidental to operation. Every telephone company must have a large investment in materials and supplies to enable it to make prompt repairs and minor adjustments of the service as demands from subscribers require. This is not intended to include construction materials and supplies which would find their way into the unit costs entering into the appraisal. The item is supposed to cover only current operating materials and supplies. The largest demand for these is from current maintenance, and from necessary replacements.

There must also be had at times a substantial amount of cash to enable the company to meet its current obligations promptly and to take advantage of favorable conditions in the market to acquire necessary stores and supplies for operating purposes. By having such cash the company is enabled to take advantage of discounts and quantity purchases.

Its cash requirement must also be large enough to anticipate the usual operating expenses which must be met, and which develop at a rate irrespective of the rate at which collections are made.

It is because of the presence of these different factors that no one method for determining working capital is fair in all cases at all times.

The allowance which I make of $3,500,000.00 is intended [fol. 3463] to cover the usual and normal requirements and embraces full recognition of the necessary materials and supplies, cash and cash items. This is the average requir-

ment for the year. The needs at particular times may be greater or less.

Q. Now go on and discuss the other methods that your exhibit shows.

A. In a number of cases Courts and Commissions, after considering the various lines of evidence to which I have already referred, or will later refer, have adopted a round figure amount which, related to the value of the physical property in those cases, ranges from three per cent to well over four per cent.

Illustrating the effect of such method in this case I show what 3½ per cent would be computed on the appraised value of the physical property as of June 30th, 1925, and reflected in Hagenah Exhibit No. 2.

The appraised value to which reference is made is $112,613,847.00 exclusive of working capital and going concern value. 3½ per cent applied to this amount is $3,941,484.00. Obviously applying a 4 per cent rate would show a still larger working capital requirement, and had 3 per cent been used the allowance would be somewhat less. There are one or two instances where the allowance has been almost as much as five per cent.

The third method set forth in Exhibit No. 4 is that in which the working capital is arrived at by applying to the average number of stations in service an estimated amount per station. This is the method which the New York Public Service Commission has frequently used and has most [fol. 3464] recently used in its most important telephone cases.

The number of stations on December 31st, 1925, was 537,147. This allowance which has been made in the New York case of $6.50 per station, the working capital allowance is $3,491,455.00.

Method No. 4 is a short cut in which major consideration is given to the investment in materials and supplies, to which is added one month's operating expenses. This is generally taken as one-twelfth of the operating expenses for the year in which the rate investigation is made.

The average monthly operating expenses for 1925 computed from the statement of operating expenses in Hagenah Exhibit No. 1——

Q. Page what?

A. Page 18; the amount is $1,716,004.00——

Mr. Burr: To the extent that Mr. Hagenah's answer is based upon the authority of Courts and Commissions and upon allowances made in other cases, we move to have the answer stricken out in order to save the record.

Commissioner Poor: The motion will be overruled. He is testifying here as an expert and giving his judgment in the matter.

Mr. Burr: Note an exception.

The Witness: The average investment in materials and supplies excluding reserves for adjustment was $1,370,-012.00, and that amount is taken from Morse Exhibit No. 2, offered under date of December 10th, 1926. The total work-[fol. 3465] ing capital on this basis is $3,086,01€.00.

The fifth method is computed in a manner similar to the fourth method shown in Exhibit No. 4, with the exception that the operating requirement in addition to materials and supplies is taken for 1½ months. In each instance the details are taken from the exhibits referred to in connection with the explanation of Method No. 4. On this basis the working capital would be $3,944,018.00.

It will be seen that according to the five methods the allowance for working capital ranges from a maximum of $3,944,018.00 to a minimum of $2,835,698.00.

Giving my own weight and judgment to these different factors I am of the opinion that $3,500,000.00 is a proper allowance for working capital on the valuation as of June 30th, 1925.

Q. With such an allowance, what, in your opinion, would the company be able to do with reference to the uses of its working capital?

A. It would be enabled to continue the same amount of materials and supplies subject to the same variations in demand and use which have developed during the calendar years 1923, 1924 and 1925, and it would be able to anticipate its operating expenses for considerably more than one month.

Q. What is the practice of the Ohio Bell Telephone Company with reference to the collection of its bills, and how does it affect this item of working capital?

A. Many of its exchange accounts are collected in advance; that is, parts of the accounts are collected in advance. To that extent the company have the use of the funds [fol. 3466] during the time in which they are being earned.

Q. What part of the income is collected in this manner?

A. I am unable to say what the amount is except to state that in the first method shown in Exhibit No. 4 consideration is given to the amount of cash which the company has, and also full benefit is taken of the amount of deposits which the company holds.

Q. In that first method, of what does the item "Accounts receivable" consist?

A. That covers the amount of money that the company has billed and which has not yet been collected.

Q. Now what have you to say as to the item of going concern value as it applies to The Ohio Bell Telephone Company as of June 30th, 1925?

A. It is in my judgment necessary that provision be made for an allowance for the going concern value of an operating and revenue producing public utility. This is a part of the property that is being appraised in this instance.

The Ohio Bell Telephone Company does have a substantial going concern value as of June 30th, 1925. The allowance which I have made for this item is $11,260,000.00.

There is no item for going concern value in the appraisal of either Messrs. Williams or Sloan. Mr. Williams has included an item entitled "Cost of Establishing the Business" to the amount of $20,768,158.00. Mr. Sloan has included an amount under substantially the same title of $22,493,551.00.

[fol. 3467] To reconcile these different allowances it is necessary to go somewhat beyond the items and the strict terminology in which they appear in the different reports.

Q. Mr. Hagenah, let me ask you whether or not the books of the company as shown by your audit reflect any expenditures which show the cost or value of this item?

A. They do not directly show expenditures related to this item, but as the result of the expenditures which appear on the books there has developed this element of value known as going concern value. It cannot be computed from the books and records alone and there are no series of accounting entries which can be added to prove it. There is no such item as going concern value appearing in the property accounts.

Q. Go ahead now with your discussion.

A. At the risk of being somewhat argumentative I will have to go back of the allowances which have been made by

the different engineers for what, on examination, purports to be an attempt to appraise substantially the same item of property.

One cannot approach this subject without——

Mr. Burr: That is to say, Mr. Hagenah, the same item of property that you are now appraising?

The Witness: Yes, sir.

Mr. Burr: I understand.

The Witness: That is, I think Messrs. Sloan and Williams have the same item in mind, but they have approached it from a different angle and have reached a conclusion [fol. 3468] which I say is not the going concern value but is merely evidence of going concern value. It tends to prove, but is not conclusive proof of the item to which the Courts have referred and called "Going concern value."

The engineer, in ascertaining the fair value of a public utility for rate making purposes, is greatly confused by what the authorities have said on this subject and the many different attempts which have been made to solve this problem and reach a conclusion that is fair to the public and at the same time to the party making the investment in the business.

In certain instances it has been contended that the measure of a going concern value lies in the established earning power of the utility. That has certain advantages, but also limitations, because the business under consideration is subject to public regulation and therefore a limitation of the earning power.

In other cases an attempt has been made to arrive at the going concern value by appraising the established credit of a public utility. In certain instances that is a reliable index but in other instances, as may arise in periods of financial depression or political disturbances, a perfectly well-organized and efficiently manages utility may, because of conditions outside of the business, have its credit, previously well established, now seriously impaired.

In other instances attempts have been made to determine the going concern value by computing the cost of establishing the existing business; that is, the business of the com- [fol. 3469] pany as of the time of the investigation.

And, in proof of these, excellent evidence has been assembled extending all the way from various sincere economic analyses to other studies which partake of flights of the imagination.

In some instances the measure of going concern value has been held to be synonomous with the sacrifices which the investors have made during the upbuilding of the business; and confusion arises out of the fact that the period of building up the business has, in some cases, been limited to the initial establishment of a successful enterprise, and to the computation of sacrifices over a long period, sometimes as long as twenty years.

In other instances Commissions have endeavored to find as the measure of going concern value the amount by which the utility owners have failed to earn a reasonable return throughout the history of the business.

An engineer, in approaching this subject, is concerned with the identical problems with which every Public Utility Commission has had to contend in solving this problem, and since it is not one which lends itself to precise mathematical computation it must be approached by a process of analysis in which the witness must assume some of the functions of the Commission in arriving at the basis on which his own judgment is founded.

In measuring the going concern value by the earning power of the utility it is necessary to make assumptions, and the amount of the assumptions will largely determine [fol. 3470] the answer. For example, if we assume that the earning power of a successfully established utility is to be eight per cent, we must first prove that eight per cent is a reasonable rate. We must also prove that the industry has been well conceived; that it has been well and efficiently managed, and that its public relations are satisfactory; also that its service has been properly developed. If in any one of these respects the evidence should show that the utility was at fault or that an abnormal condition existed, the result so obtained would be open to serious criticism and fail to have any real evidentiary value.

We are confronted with somewhat similar difficulties when we seek to measure the going value in terms of credit. The money market is a fluctuating factor; also public relations and public attitude towards utilities.

There are times when a well-established utility is able to sell high-grade securities on an income basis slightly less than five per cent. If its capital structure were different, and we must assume a certain capital structure to test out this method, that same utility might be selling junior bonds or it might be selling preferred stock. If its financing were

on either of these bases, the cost of capital would be substantially greater.

Since any factor entering into this study is necessarily an assumption, we again find that our answer can be influenced very largely by the degree to which we vary our [fol. 3471] assumptions, and therefore its value, as a sole guide to the Commission, is open to serious criticism.

If we consider the value of an attached business, or what is generally known as the going concern value, as measured in its commercial sense, we have definite factors as a guide, each, however, open again to certain criticism.

The financial market and the stock exchanges give strong indications of the recognition of going concern value and the measure thereof. In a period of industrial activity and of cheap money large prices are paid for public utilities because of their going concern value, and one group of bankers or investors may easily pay a substantially larger amount for a given property because of the value which that property will have in relationship to other properties already owned. Recognition must be given to this fact or the result will be influenced by extraneous factors.

The theory for measuring the going concern value in terms of sacrifices by the investor is also open to criticism. It is, on analysis, purely an equitable consideration.

Since the public seeks to regulate the utility and limit the return, it is obvious and fair that if the utility, in building up its business, must make an investment greater than that represented by physical capital, that such additional expenses which will make the business responsive to public needs must be regarded as a part of the cost and of the fair value of the property. The difficulty with this method lies in determining where the period of sacrifices [fol. 3472] shall cease. In some instances it has proved the most satisfactory measure of going concern value. In other instances where improperly applied it has been subject to severe criticism, as in the Galveston case.

In a utility which for a period of twenty or more years there has never been shown the ability to earn a reasonable return, it becomes absurd to say that the property is more valuable because of its consistent losses. The other extreme, however, is favorable, where a property can show that during four or five years of intensive efforts it has expanded from ten to fifteen per cent of its total cap[illegible]

in making its business responsive, that expenditure is in fact a part of the true investment in the business.

It will thus be seen that all the methods which authorities have used in measuring the going concern value have, under certain instances, large value as a guide. In other instances they have little value. Each method must be studied in relation to the conditions which obtained at the time it was used and in the particular case in which the Commissions have applied them.

One difficulty which runs through much of the going concern value law and practice grows out of the confusion between evidences of value and the measure of the value itself. For example, the method used by Messrs. Sloan and Williams in seeking to establish the cost of attaching the business is but evidence of the going concern value, but not proof of it. We can see how, in good faith, a study [fol. 3473] may be presented showing what it would cost to develop the business based on certain assumptions. If those assumptions are correct the conclusion is deserving of certain weight, but if those assumptions are incorrect, in view of the other assumptions made in the appraisal of other classes of property of this company, their value as evidence becomes relatively small.

There is no one subject in the regulation of public utilities that has received more serious study, and the subject has been cleared up much by the decision of the United States Supreme Court in the Des Moines gas case. I refer to that because it has given us a new starting point in the determination of going concern value. It has also given us a definition of going concern value, and it is that definition which I have adopted as the basis of my allowance for going concern value, and that definition is not present in the computations of either Messrs. Williams or Sloan.

If I may be permitted to cite the decision to which I refer and the basis, I will say that the United States defined going concern value in the Des Moines case, reported in the 238 United States Supreme Court Decisions, page 153, and at 168, where the following language is used:

"That there is an element of value in an assembled and established plant doing business and earning money over cost [illegible] advanced is self-evident. This element of value is a property right and should be considered in determining the value of the property upon which the owner

[fol. 3474] has a right to make a fair return when the same is privately owned although dedicated to public use."

In the Des Moines gas case, with which I am fully familiar and in which I spent nearly one year of time, all the known methods of arriving at a reasonable expression of going concern value were developed at great length, and presented to the Master and argued before the Federal Court and the United States Supreme Court.

The important part of that decision as it affected the work of the engineer to date is that the Court says, after listening to all the evidence of going concern value, that the existence of this property item is self-evident, and it defines the going concern value as "that element of value which is present in an assembled and established plant doing business and earning money over and above one not thus advanced".

In this instance I have for my own studies satisfied myself as to certain basic facts; first, The Ohio Bell Telephone Company is a well conceived project; it is a necessary utility service; it is well located; its construction and its equipment is modern and represents the best progress in the telephone art; it is efficiently operated and well managed, and it has shown that it has an earning power and a capacity to render necessary telephone service at rates that are found, by proper authorities, to be compensatory. Because of the presence of these facts and what is now the law of the highest Court, I assume, as the Court says, that the existence of going concern value in this case is [fol. 3475] self-evident; my only problem now is to determine the amount or reasonable measure of the going concern value on the appraisal date.

For this purpose, like in the determination of working capital, I have availed myself of the various avenues for approaching this subject that give promise of a reasonable result.

Going concern value, like the value of any item of property or class of property, must necessarily be a matter of judgment. No one can prove the amount of it. It is no more a difficult problem, but just as difficult a problem, to find the going concern value as it is to find the measure of damage in an injury and damage jury proceeding, or to find the value of a property under condemnation wherein evidence of the value of the property for various purposes is received. I am trying to do here what a jury is doing

in certain cases, a condemnation board or a public service commission.

One of the methods which the Commissions have followed, and which in the early days received great weight, was to measure the value of this attached business, or this item of property referred to in the Des Moines gas case, by applying to the average number of customers supplied by the utility at the inventory date the estimated cost of attaching such a customer.

It can be shown in this instance, and I testify to it as a fact, and it has been demonstrated in other cases of record, that the average cost of attaching a customer ranges from [fol. 3476] $25.00 to well over $30.00. If I use the lowest unit of $25.00 and apply it to approximately 535,000 stations, I find according to this method that the going concern value is over $13,000,000.00.

I can find one measure of the going concern value by studying the relative credit of this company at different times and the credit of a new company operating under substantially the same conditions except that its business is not developed. The conditions surrounding the sale of public utility securities which are a matter of record before the leading stock exchanges show that a new company, with its business untried and undeveloped, must pay substantially more for its money because of the greater hazards than a company that has operated for many years and whose efficiency and whose property is well known.

In this instance the utility has operated since the early '80's and its record of performance is known.

If we assume, and I am using, the average rates of a large number of public utilities that are material in a study of this nature, where the cost of capital for a new industry is approximately seven per cent and for an established industry the average cost of capital for the different forms of financing, covering bonds, preferred stock and common stock, is an average of six per cent, the going concern value in this case will be over $16,000,000.00.

Q. How did you arrive at that figure?

A. By capitalising the value of the property on the difference in the rates. That method, however, must be qualified [fol. 3477] by the fact that in 1925 we had an exceptionally favorable financial market. The basis on which the securities were absorbed by the public reflect a somewhat larger discounting of the future than is ordinarily present, for

which reason the $16,000,000.00 cannot be accepted as a final or fair index of the going concern value as of the inventory date.

Q. Would the figure be more or less because of those conditions?

A. It is greater because of those conditions; that is, the securities of a well-established company are taken on a lower income basis because of the optimism or degree to which the future is discounted by the purchasers.

A third method which I have tested in this case is the reproduction cost of the property in its entirety; that is, treating the construction project as terminating not with the completion of the physical plant, but to include also the building up of the business. From this viewpoint the factors which make for going concern value represent little more than a continuation of the item of interest during construction or administrative expenses during construction that have been described in connection with the appraisal of the physical property.

Without going into the detail of such studies, unless called for on cross-examination or otherwise desired, if we take as the cost of the money during this development period the net cost to The Ohio Bell Telephone Company of the money advanced to it by The American Telephone & Telegraph Company as 5.88 per cent, and assume the de- [fol. 3478] preciation on the property during the development period at the depreciation rate found necessary by the company, the allowance for going concern value is in excess of eleven per cent.

This answer is of course subject to a number of adjustments. First of all, I must assume the length of time over which the business will be developed, and I must assume that the operating expenses will be met as and at the rate that the customers are attached. On this basis the going concern value in this case would be well in excess of $12,000,000.00.

Another factor which influences my judgment in arriving at this conclusion is the studies which I have made of the operating records of a number of public utilities wherein the accounts were kept for a long period of years under the same classification and where the records were complete from the initial expenditure. In different instances the cost of building up the business has ranged from eight per cent to as high as eighteen per cent of the money invested in

the physical plant; in other words, after providing for all items of cost related to the physical plant the company expended by direct appropriation or for failure to take out interest and dividends, a sum equal to my eight to eighteen per cent before the business was established to that point where the company was able to give that return to its owners which Utility Commissions had said was a reasonable return.

The method most generally used in arriving at the going concern value is based on a consideration of all the decisions [fol. 3479] of Courts and Commissions on this subject wherein judgment expressions are shown. These cases are very numerous and some can be found in the decisions of nearly every public service commission of the United States and quite generally in the Federal Court decisions, and in the decisions of the United States Supreme Court. They range from findings under eight per cent to over fifteen per cent. In one instance the allowance was thirty per cent. The average is approximately ten per cent.

At this point the United States Supreme Court has again come to the assistance of Commissions and engineers by deciding a second important step which leads to a reasonable conclusion, this time in the recent decision of the United States Supreme Court in the case of McCardle against Indianapolis Water Company, decided November 22nd, 1926; in that case the Supreme Court approved a finding by the Indiana Public Service Commission of an allowance for going concern value of 9.5 per cent. The testimony had been 10 per cent, and was still 10 per cent before the Federal Court on appeal, but is shown here to be 9.5 per cent because subsequent to the date of the official hearing there was added to the appraisal the additions for physical property and no change was made in the estimate for going concern value. Consequently, with an increase in the capital base, the allowance for going concern value indicated a percentage below ten.

Referring to that, after approving the amount, the Court said: "And the reported cases showing amounts generally [fol. 3480] included by Commissions and Courts to cover intangible elements of value indicate that ten per cent of the value of the physical elements would be low when the impressive facts reported by the Commission in this case are taken into account."

Mr. Burr: If I understand you, Mr. Hagenah, the allowance in the case that you are now discussing was on the basis of ten per cent?

The Witness: It was on the basis of ten per cent.

Mr. Burr: But did not equal ten per cent because of the fact that certain net additions had been made after the amount for going concern value had been computed and nothing was added in the net additions on account of going value?

The Witness: That is right. The testimony which the Court said embraced impressive facts was of substantially the same nature as I have given here and embraced a recital of the various methods by which the going concern value could be measured.

Because of these two decisions, first the Des Moines case, stating that the existence of going concern value in such a property is self-evident, and now in the Indianapolis Water case "That the reasonable measure thereof, according to the general practice of Commissions and Courts, is ten per cent", I have adopted ten per cent as the measure of going concern value for that item of property as defined in the Des Moines gas case. My allowance is $11,260,000.00.

[fol. 3481] Mr. Burr: And that is notwithstanding the fact that by these various methods of computation the going value would be something in excess of ten per cent?

The Witness: Yes. The various methods that I have referred to are mere evidences of value. My final conclusion is a judgment figure and based on a testing of this subject by the different methods and noting the conditions which obtain as of June 30th, 1925, which make the finding in individual cases either too high or too low because the conditions at that time were not average.

By Mr. McConnaughey:

Q. Have you anything to say with reference to the method pursued by Mr. Williams or Mr. Sloan, or both of them, in arriving at their estimate of the cost of attaching business?

A. I have studied the exhibits which they have offered and find that in each case the conclusion does not seek to show the amount of going concern value. It merely tends to show the theoretical cost of attaching the business on

the basis of a series of assumptions. These assumptions are in some instances at variance with the facts.

There is no entire agreement between Mr. Williams and Mr. Sloan on many of the individual items. In fact, other parties equally well informed would come to different conclusions as to the weight to be given to these different factors and would differ materially in the assumptions themselves. It is possible to vary these assumptions a small amount in a number of significant aspects and materially alter the conclusion. The studies are not consistent with [fol. 3482] the valuation principle on which the physical property has been appraised and the estimates for items included in their studies are clearly excessive in view of other facts contained in the record.

The principal criticism which can be made against both of these exhibits is that, assuming that they seek to measure the going concern value, both engineers have appraised the physical property on the basis of the piecemeal construction where that class of construction can affect the physical property. The rate at which the property was being built in the estimates on which they rely would range from 25 to 50 years. They estimate that the business can be attached in a period of five years. While the piecemeal construction method is applied to the physical property, they use the reproduction method under a continuous program to the intangible value. Each method results in the largest possible results in each instance. The reproduction cost of the physical property is excessive because of an improper method used. The intangible value or cost of attaching the business is excessive because an improper method again is used.

If either Mr. Sloan or Mr. Williams would apply the piecemeal construction method to the development of the business they could have made no addition because the items to which they refer are largely included in operating expenses and form the basis of the high cost of service on which the company is now asking that an increase in rates be approved.

[fol. 3483] If they had assumed for the physical property the reproduction new basis, the same as they assume for reproducing the attached business, they would have found a physical value from $10,000,000.00 to $15,000,000.00 less than that which they have reported.

Q. Mr. Hagenah, referring to Mr. Williams and Mr. Sloan, let me call your attention to the fact that Mr. Schneider also testified on this subject, and, as I recall, furnished the basis for Mr. Williams' study of this subject, or do you recall that fact?

A. I stand corrected, and where I have referred to Mr. Williams' testimony as to the cost of attaching the business I should have said Mr. Schneider, because it was Mr. Schneider who filed the exhibit and testified on the subject of cost of attaching the business, and not Mr. Williams.

Mr. Sloan includes in his cost of attaching the business an item of $2,086,000.00 to cover advertising and soliciting. Under the theory of reproducing the business of The Ohio Bell Telephone Company under conditions of 1925, it is unreasonable to assume that this large expenditure would be necessary to educate the people of Ohio in the advantages of exchange and long distance telephone service.

Mr. Schneider in his report dwells at length on the expenditures which would be necessary in convincing business men of the need of long distance telephone service and the advantage of exchange service. If the same logic were applied to electric light, to water, gas and sewerage [fol. 3484] service, equally unreasonable results would be obtained. They are so at variance with the facts that they do not constitute an element of cost in the reproduction of the business.

If The Ohio Bell Telephone Company were destroyed by some catastrophe and its business was to be rebuilt as fast as this construction program contemplates, the telephone company would be hard put to find the facilities for attaching the customers who would appear voluntarily to be connected with the service. It would not be necessary to spend over $2,000,000.00 in newspaper advertising or soliciting or public demonstrations of the advantages of the instrument.

There is further included in their estimates items covering the forms and methods of handling the business. These are supplied to The Ohio Bell Telephone Company under its contract with The American Telephone & Telegraph Company.

There is included in its operating expenses, or rather as a deduction from its earnings, a payment that entitled the company to this service.

As an indication of the difference of opinion between Mr. Sloan and Mr. Schneider on this subject, it is interesting to note that while Mr. Sloan estimates the value of these methods and forms at $50,000.00, Mr. Schneider thinks they are worth five times that much.

Mr. Sloan in his exhibit allows for maintenance of the physical property during the period of attaching the busi-
[fol. 3485] ness. A property constructed and completed new in all respects would hardly requir the maintenance expenditures during the time that the customers were being attached in the same degree that maintenance is required when the property has an average age of over eight years; his rate is not as high as the present rate but is very nearly as much.

There is included especially in the study of Mr. Schneider, without going into detail, an estimate covering most of the groups of operating expenses set forth in the company's statement for 1925, and Mr. Schneider includes for these items substantially the same amount per station which is developed in the Company's operations during 1925.

It is inconsistent to assume that the operating ratios established in 1925 after so many years of operation are the identical ratios which would be present in the business that is to be established under the rapid forced processes which his exhibit contemplates.

The inconsistency of the position of this testimony arises when Mr. Schneider finally closes his exhibit and he finds that the various items of cost which he said would have to be incurred as operating expenses are in fact greater than the operating expenses which the Company incurred in 1925 when it operated as a going concern.
[fol. 3486] He has added thereto an item of eight per cent on the full appraisal value as determined by Mr. Williams, and finally shows through his Exhibit as proof of the requirement for the intangible items to which he testifies a revenue that is substantially $6,000,000.00 in excess of what the Company collected in 1925, and which is here in issue.

Mr. Schneider's Exhibit shows that the gross earnings which will be necessary to sustain the intangible value to which he testifies, namely, $22,493,000.00, is $36,261,000.00, whereas the actual operating revenues from all sources of this Company during 1925 was only $29,667,000.00.

Q. To what page of his exhibit do you refer?

A. I am now referring to page 149 of Schneider Exhibit No. 3, offered January 29th, 1926.

If, instead of the theoretical $36,000,000.00 of gross earnings required to sustain his finding, we use the actual gross earnings of the Company reported for 1925, his estimate for the cost of attaching the business is increased substantially beyond $22,000,000.00.

If, however, both the studies submitted by Messrs. Sloan and Schneider are repudiated, using the valuation contained in Hagenah Exhibit No. 2, and using the Company's actual experience and operating expenses and revenues for 1925 as the guides for the computations where they have used them in other exhibits, the cost of attaching the business will be very materially reduced.

[fol. 3487] Q. Mr. Hagenah, the figure that you use in your valuation of this property for the going concern value item is $11,260,000, which I understand you have arrived at approximately on the basis of ten per cent of the physical value?

A. Yes, sir.

Q. Please state what it was that guided your judgment to that ten per cent figure in connection with the study of various methods that you have made in connection with this property?

A. I went through the same process of criticism in my mind which Commissions have gone through in rejecting the several tests to which I referred; for example, the use of $25.00 per station, which led to an indicated going concern value of $13,000,000.00. I would reduce that amount because the $25.00 per station factor has been in use over 15 years in testing going concern value. Conditions today are more favorable to the utility customer. The service is much more widely developed; a telephone is no longer a luxury but is an article of necessity. And in most cities the time is not far removed when there will be as many telephones as there are families. That point is already reached in some cities in the United States.

Customers come voluntarily to the utilities today and do not have to be educated to the use of the instrument, which education was necessary 15 years ago. Again, some of the advertising and demonstrations which today are included in a service study of this character are not nearly so relat

to the cost of attaching the customer as they were years [fol. 3488] ago.

There are questions of public policy and education of the public to the advantages of investing in telephone securities; the dependence of business on long distance service. Those are merely two of three instances in which public utilities today are spending a large amount of money which can only be remotely related to the number of customers gained. In other words, they are approaching the public in more ways than one today for the expenditures they are making. If that were applied to the conditions out of which the old $25.00 per customer unit developed, we might find a unit today considerably less than $20.00; I am satisfied in my own mind that it would be.

I would not say that the cost of financing or yield from telephone securities in 1925 was typical over a long period. We had just emerged from a period of very high cost of capital for public utilities. We were, in 1925, entering into a period of very cheap money. We were catching up in our industrial and commercial development for the deferred work which war conditions had created. This restoration of normal industrial conditions produced a somewhat unusual activity in 1925 which has largely been continued into 1926, making this period one of the longest, most outstanding periods of industrial activity in the history of the United States.

Because of this rather unusual condition I would reduce somewhat the result that I would obtain if I relied on these factors alone.

[fol. 3489] There are of course a number of Public Utility Commission decisions where, because of local conditions, no allowance whatever was made for going concern value. In many of the cases the allowance has been comparatively small expressed in terms of the physical property.

Mr. Prouty, for many years in charge of the valuation work covering railroads conducted by the Interstate Commerce Commission, made the statement in one hearing that his studies led him to believe that 8½ per cent of the value of the physical property was a fair indication of the going concern value. That reflected many years of intensive study.

I have weighted these various factors in my own mind both as to the methods and the conditions under which they

would be tested in 1925, and it is my judgment that ten per cent is a fair conclusion after giving due weight to the factors both tending to increase and to reduce that estimate.

Mr. Burr: I move to strike from the record the portion of the answer in which the witness refers to the 8½ per cent as found by Mr. Prouty.

The Witness: It was not found; it was his opinion; it was not a finding.

Mr. Burr: I move to have it stricken from the record.

Commissioner Poor: The motion will be sustained.

Q. What is your conclusion as to the reproduction cost new of this property as of June 30th, 1925, with all of these [fol. 3490] elements considered?

A. $127,373,847.00.

Q. In your investigation did you take any steps to determine the present condition of that property and its present value?

A. I did.

Q. How did you go about that study?

A. I first requested that the Company supply me with such data as it had compiled bearing on the physical condition of the property. I then made by myself personally, and by those reporting to me and under my direction, an inspection of the major classes of property and the more important items in each class to determine the extent to which depreciation existed in its various forms.

I first wanted to learn if there was any deferred maintenance in the property. I wanted to see to what extent current repairs were being made as needed. I then wanted to ascertain the extent to which wear and tear had operated or was existing to impair the value of the property beyond that which would be covered by current maintenance.

I also gave consideration to the factors of obsolescence, inadequacy and municipal requirements.

As to the general maintenance of the property I found it in very good condition.

I personally examined all of the buildings of the company located in the large cities, except Canton. There is one large building used for exchange purposes and several small one-story buildings in Cleveland which I did not see. All the others I examined from basement to upper floor. [fol. 3491] noticed the condition of the wall on all sides

the building, both outside and inside. I looked for cracks in the foundation and in the building walls and made particular observation at those points where the stresses in the walls were the greatest. I examined all wood and concrete floors, steel work where it was exposed, piping, plastering, carpentry work and wall finishing.

In general the buildings are in excellent condition. Where they are not in the highest possible practical working condition it is because some part of the building is growing old.

I found no instances where I could say maintenance was deferred or where I believe a replacement should be made. There is no part of any of the buildings which I inspected where a replacement could be made without sacrificing some remaining value.

The same is generally true with respect to the central office equipment in these buildings. I checked the routine maintenance work conducted by the company and saw the reports in the exchange offices indicating the extent to which the different maintenance employes were carrying out these instructions. I noted the condition of the cabinets, the wiring, the points of contact, the cords, and the general appearance and cleanliness of the equipment.

It is due to the Company to day that it is in as high a physical operating condition as its equipment can be brought to.

Poles, wire and cable were examined in all the large [fol. 3492] cities, and some 800 or 900 miles of toll line in the country were examined for physical condition.

In the case of a large number of poles selected at random examinations were made at the ground line by removing the dirt to ascertain to what extent decay had taken place. Poles were sounded to see if they were solid.

As to this class of property also the condition is very high.

The property has been constructed according to the specifications of The American Telephone & Telegraph Company. In the construction and in the maintenance these instructions have been generally followed.

For each class of property there was determined a per cent condition reflecting the actual existing wear and tear which was not covered by current maintenance.

I have, however, taken into consideration one further factor, which I would call the obsolescence of the property.

This results from the fact that it is growing old and does not represent the most efficient and most modern equipment and types of construction in every instance. There are a number of central office installations of advanced years. They are in good condition. The maintenance cost, however, is becoming greater because of the age and wear and tear of the property. The high maintenance cost on this equipment is included in the Company's operating expenses and has been accepted in Hagenah Exhibit No. 1 without comment or adjustment.

I find that in spite of all the superficial indication which [fol. 3493] an engineer can note from the most careful inspection there are conditions which tend to impair the value of the property more than its operating or physical efficiency would indicate. I have made a deduction for those items. As I read the testimony of Messrs. Sloan and Williams—and I heard their oral testimony—I believe that that is the only point of difference between us. As to the physical condition, as to wear and tear, I am in agreement with them, that the depreciation is approximately ten per cent. But I believe consideration must be given to those other factors of developing obsolescence when that results in a somewhat greater operating cost as compared with the newer equipment which the company has and the lower costs which they occasion in the Company's operations.

This explains why I reach a composite per cent condition of the property of 87 per cent, which is roughly three per cent lower than Mr. Williams' percentage and 2½ per cent lower than Mr. Sloan.

I may say that this further deduction on account of obsolesence and progress in the art that is reflected in various items of property is not based on any life table or stralght line method of determining per cent condition. It is based as well on inspection of the property as where that inspection is limited to the mere physical factors which are present.

From the standpoint of mere operating efficiency the property is in a high per cent condition, even higher than that indicated by 90 per cent.

[fol. 3494] Q. How have you indicated your judgment as to the per cent condition of the various portions of the property in your exhibits? A. Throughout Exhibit No. 2 there is shown the per cent condition for the different classes of

property as found by inspection in the field. The average per cent condition for the different classes is shown, and that also appears in Hagenah Exhibit No. 3.

When I say that the operating efficiency of the property is higher than 90 per cent, I mean that the deduction for existing depreciation made by Messrs. Williams and Sloan to the amount of approximately 10 per cent, and by me to the amount of 13 per cent, is in regard to the condition of the property and does not mean that this can be corrected by further maintenance expenditures or that any replacements can be made or are recommended.

Replacements made in the property on any large scale now would involve the scrapping of property that still has remaining life and which it is to the advantage of the public to have retained in service until that life has been further exhausted.

Mr. Burr: May I ask here, in the interest of saving time perhaps for all of us, whether the factor of obsolescence, to which you have referred in your previous answer, is present in each one of the items of plant shown in your Exhibit No. 3, in your judgment; that is to say, in each one with the exception of the items of right of way and land?

The Witness: No; as to a number of the classes of prop- [fol. 3495] erty there can be no thought of obsolescence. There, the difference is purely that of opinion of different engineers made at the same time, but using, however, the same method of measuring the existing depreciation. For example, as to buildings, I have made no deduction for obsolescence there, and find none. I find, however, the presence of obsolescence in certain types of central office equipment that have been in use very many years.

Mr. Burr: In order not to interrupt the direct examination any further, may we have a list from Mr. Hagenah of the classes of plant wherein he found the element or factor of obsolescence present, in his judgment?

Mr. McConnaughey: Can you give that on the record?

The Witness: May I give that tomorrow instead of now?

Mr. Burr: Oh, yes; I do not want to interrupt you now.

By Mr. McConnaughey:

Q. The 87 per cent condition opposite the title "Total specific construction cost", in your Exhibit No. 3, I assume is a composite figure—composite percentage?

A. It is.

Q. Arrived at by weighting the percentages above with the amount of the property in each item?

A. Yes, sir, that is right. I should probably say here, in the way of explanation of my testimony, that by no means is all the difference between percentages appearing for my appraisal as compared with the percentages for Messrs. Sloan [fol. 3496] and Williams' due to obsolescence. As to some of these accounts the question of obsolescence is not present at all. It is just a difference of opinion as to the extent to which wear and tear and the usual factors of depreciation are present.

Q. Now, Mr. Hagenah, go back for a moment to the items of overhead construction costs; I wish you would explain the classification that you have used with reference to those items in relation to the classification used by Messrs. Williams and Sloan in their statement of these values. The purpose of my question is to ask you to state whether or not you have covered the same elements under different terminology or whether you have differed from them as to the items that should be considered?

A. We differ solely as to terminology. I am satisfied that I have covered all the items in overhead charges which they have covered, and I am sure they would make the same statement. You will notice that in some instances one of the engineers has lumped two items which another has reported separately.

Q. Now I refer to the notation opposite your engineering item $5,762,756.00; there is a "D" in parenthesis which refers to a note in the margin, which states "includes preliminary engineering"?

A. I do not know whether Messrs. Sloan and Williams have provided for preliminary engineering, but I assume they have. I have generally used my accounting term of engineering, including preliminary engineering.

As long as I wanted to report for all three on the same [fol. 3497] line, I call attention to the fact that my allowance for engineering is slightly greater than the allowance that they have made.

I explain that fact, that I have included preliminary engineering, while I believe they have given somewhat greater weight to plant supervision on their labor charges in the direct cost; I am satisfied that I have covered all the items

of overhead charges usually and properly to be included in an appraisal, and from the manner in which I checked their reports I think they have done the same.

For example, both Messrs. Williams and Sloan report omissions as a separate item. I have included omissions with contingencies and casualties.

There is also a lumping of items under the title, "Administrative, legal and taxes". To some extent the term "Administrative" used by Mr. Sloan and myself is to be regarded as comparable with the term "General expense" used by Mr. Williams.

Q. After determining the per cent condition, what effect does that have upon the value stated in terms of dollars?

A. I have reduced the value on account of depreciation to the amount of $15,031,472.00.

Q. And what is the result of that?

A. I find a so-called present value or a reproduction cost new less existing depreciation of $112,342,375.00.

Q. As of what date?

A. As of June 30th, 1925.

Q. You have laid some stress in your testimony upon the method of reconstruction under a continuous program [fol. 3498] of construction; I wish you would explain just exactly what you mean by that, Mr. Hagenah?

A. My theory of the reproduction cost of the property is that The Ohio Bell Telephone Company would proceed with the construction of such a property as is reflected in the inventory, carrying it through as nearly a continuous construction undertaking as the nature of the work makes possible; that is, there would be organized construction gangs operating from central depots and there would be central supply stations, and that the distribution system in each city would be constructed under one undertaking instead of constructed over a long period of years through a series of detached work orders made at different times and connected with different parts of the existing system.

This is opposed to the so-called method of piecemeal construction where the unit costs said to reflect reproduction conditions are taken from sundry work orders or completion reports. In these instances it will be found that the completion reports are not confined to single undertakings. They include in many instances not only construction work but reconstruction work and current maintenance.

They involve the construction of many different classes of property.

Some of the completion reports mentioned in the testimony of Messrs. Williams and Sloan included not only the cost of erecting poles, but there was the cost of removing existing poles; of taking down certain crossarms and putting on others; of taking down some wire and putting up [fol. 3499] more wire; of taking down wire and replacing it with cable. And these same work orders involve not only aerial construction but sometimes other classes of construction work. This is not unusual but it does complicate the computation of unit costs from such estimates since the construction party in the field must make estimates of time allotted to each of the undertakings. If there is an error in judgment or an ordinary mistake in keeping the time, that is reflected in the ultimate unit cost. And it is, with the best of effort, difficult to correctly apportion the time where both construction and reconstruction work is going on at the same time and the construction work covers several different classes of work.

Mr. Burr: May I ask you at this point to what finding you apply the 87 per cent in order to arrive at the amount of $15,031,472.00 shown opposite the line "Depreciation as of June 30th, 1925" in your Exhibit No. 3; or, I should say, to what do you apply the 13 per cent as being the difference between 100 per cent and 87 per cent?

The Witness: It is applied to the reproduction cost of the physical property for each of the accounts that appear in Hagenah Exhibit No. 2. There is no deduction for depreciation in the case of right of way and land, and the deduction ranges from only five per cent in some cases to as low as 27 per cent in the case of exchange pole lines and 30 per cent in the case of tools and implements. It is not the result of one single arithmetical computation. It includes a corresponding reduction in the overhead charges [fol. 3500] applied to the respective physical property accounts.

The results are shown in detail on page 2 of Hagenah Exhibit No. 2.

By Mr. McConnaughey:

Q. Now, Mr. Hagenah, I wish you would state whether or not you made any investigation in considering this in-

ventory as to whether there was or was not any duplication of facilities existing in this property, and what was the result of that investigation if you made one?

A. There is some duplicate property, if, by that term, you mean what is often described as parallel construction. That has resulted from the fact that The Ohio Bell Telephone Company, in September, 1921, took over, through consolidation, the property of The Ohio State Telephone Company. In a number of the larger cities of this State both companies were operating exchange service, and in many of the streets there was parallel construction of pole lines, with wire, cable and, in some instances, parallel construction of conduit facilities. This was rather marked in 1921 because up to that time each company had constructed facilities calculated to serve its present and immediately future requirements.

When the consolidation was made there was naturally an overlapping of these facilities. I have seen examples of this parallel construction in practically every city where the competition in service had obtained in 1921. It is marked in Columbus, in Toledo, in Dayton and Springfield. It has largely disappeared in Cleveland for two reasons; [fol. 3501] first, the two companies' services did not overlap to the same degree in Cleveland that they did in Columbus. Also, the growth of Cleveland has been so rapid that the duplicate or parallel construction has largely been absorbed. I have given thought to this condition as it affects the question of valuation. I have endeavored to find to what extent this parallel construction operated to impair the value of the present property and have come to the conclusion that it is not a major factor at this time, and is rapidly being corrected through the growth of the city and the service where it exists.

For example, in those streets where two pole lines are now located on opposite sides, and each carrying an open wire construction, it would be more expensive for the Company to take down one pole line with its wire and to transfer the wire to the other pole than it would be to leave the construction as it now exists. These poles are often from eight to twelve years of age. It would cost as much to take the wire down and put it up on the old pole on the opposite side of the street as it would to put it on a new pole. However, in putting it on an old pole it is likely that the Company would obtain only from six to ten years maxi-

mum live or use out of the added expense, and therefore it would be cheaper to leave it as it now is.

In many cases when it is necessary to take down existing pole lines they will not be replaced at all, but the wire and aerial cable will be placed in conduits underground.

There are also instances of construction to which my [fol. 3502] attention has been directed; these consist of poles of greater length or height than the use to which they are now put requires. This has resulted from originally installing large poles to carry the wire above trees. At a later date open wire was replaced with cable which was suspended from the pole at a lower point. I have included such poles in the appraisal according to their inventory description without deduction on account of the present excess in height.

My attention has also been directed to poles which seem very high but which on examination disclose the fact that they are jointly used poles, on which an electric company carries its circuits at the top. It is good engineering that the electric utility should be at the top of the pole to guard against interference with dangerous currents. Even in instances where the electric wires have later been removed I have made no deduction in the value of the existing pole lines.

These conditions even in their most unfavorable aspects represent almost a negligible factor in the property as a whole.

Q. Did you find any of the buildings as to which it was necessary to make any adjustments in value because of any lack of entire suitability to the telephone business as at present conducted?

A. I found buildings in some of the cities which were erected by the former competing companies which probably would not be reconstructed in exactly their present locations [fol. 3503] and in their present form if the property were in fact replaced. This condition, however, is in no places present to a serious degree and does not warrant a reduction in the value of the property because of that fact.

This property to which you have now directed my attention, as well as the parallel poles, wires and cable construction, was all used and useful on the inventory date with no more excess capacity than is usually regarded as proper for spare facilities.

Q. In addition to the cost of removal of wires from ca

set of poles to another parallel set of poles is there an cost connected with the pole that is left, the pole that the wire is taken from?

A. If the property thus abandoned were to be removed or even the act of abandonment would necessitate its amortization through depreciation reserve or other accounts, this would involve an extraordinary draft or demand on the existing depreciation reserve and might occasion a larger charge against operating expenses than the company is now making.

It is, from the standpoint of operation, maintenance and depreciation, to the advantage of the public that the condition be permitted to correct itself in the normal growth of the industry and the communities.

Q. Are you able to state to what extent it has been corrected in the development of the property since this merger in 1921?

A. It has been corrected to a very large degree; I cannot say the exact figure for any city. In Cleveland it ceases to be a factor for consideration. It is not as important a [fol. 3504] factor today as it was on June 30th, 1925. Some of the construction work contemplated will correct glaring examples of this within the next year or two.

Mr. McConnaughey: I think that is all for Mr. Hagenah at this time. He will have some testimony to give later; unless you think of something else you want to state now, Mr. Hagenah?

The Witness: No, I will step aside.

Commissioner Poor. Do you want to ask Mr. Hagenah any questions now, Mr. Burr?

Mr. Burr: No, sir, not now, if you please.

Mr. McConnaughey: I believe I have offered formally Hagenah Exhibits 3 and 4, but to make certain I will offer them again.

Mr. Burr: Subject to the same objection and exception.

Commissioner Poor: The objection will be overruled.

Mr. Burr: Note an exception.

And thereupon the Exhibits last above referred to are admitted in evidence on behalf of the State of Ohio, subject to the above objection and exception of The Ohio Bell Telephone Company, and are herewith submitted and marked respectively Hagenah Exhibits Nos. 3 and 4.

[fol. 3505] And also VICTOR A. DORSEY, called on behalf of the State of Ohio, being first duly sworn, testified as follows:

Examined by Mr. McConnaughey:

Q. State your name, age, residence and occupation.

A. Victor A. Dorsey; 42 May 2nd; electrical engineer.

Q. And your residence?

A. Chicago, Illinois.

Q. With what organization are you connected?

A. I have been connected and associated with Mr. Hagenah in the investigation of public utility corporations for the last 16 years.

Q. And in that time what sort of work have you done?

A. I have prepared appraisal reports covering gas, electrical, telephone, street railway and water utilities in the United States and Canada and Mexico, and prior to my association with Mr. Hagenah I was engaged by The Chicago Railways Company, now part of The Chicago Surface Lines, in the capacity of assistant electrical engineer.

Q. And what education did you have preparatory to that class of work?

A. I had four years in electrical engineering at the Lewis Institute at Chicago.

Q. To what extent have you engaged in the activities with reference to the valuation of properties that Mr. Hagenah has been engaged in?

A. I have prepared detailed inventories of the several classes of public utilities properties and prepared unit costs [fol. 3506] and completed appraisals on the same.

Q. What had you to do, if anything, with the appraisal of The Ohio Bell Telephone Company property in question in this case?

A. The work of the organization in the field was partly under my direction and that of Mr. Hagenah; the preparation of unit costs applied to the inventory as supplied by the company came directly under my supervision, and in fact I prepared a great many of the unit costs shown in Hagenah Exhibit No. 2.

Q. Now, Mr. Dorsey, I wish you would take first the exchange pole lines and tell us how the unit costs for the poles was developed? First, let me ask you whether or not you have prepared an exhibit which shows how this was done?

A. Yes, I have.

Q. I show you an exhibit entitled "The Ohio Bell Telephone Company, Development of Unit Costs, Account No. 241, Exchange Pole Lines"; and ask you to state whether or not that is the exhibit to which you refer?

A. Yes, sir, it is.

Mr. McConnaughey: We offer that exhibit in evidence as Dorsey Exhibit No. 1.

And thereupon the Document above referred to is admitted in evidence on behalf of the State of Ohio, and is herewith submitted and marked Dorsey Exhibit No. 1.

[fol. 3507] Q. Now will you explain that exhibit?

A. Dorsey Exhibit No. 1 is a tabulation showing the unit cost derived for 30 and 35 foot Class C poles. The material average Class C cost of an Eastern cedar pole, F. O. B. St. Paul, Minnesota, is shown, for a 30 foot, as $6.68.

Q. Where did you get that figure?

A. The material price was obtained from the quotation from The Western Electric Company.

Q. As of what date?

A. As of June 30th, 1925.

The next item is an adjustment to reflect the various kinds of timber. The inventory as presented by the Company showed an average Class C pole, which includes poles of various kinds of timber, Northern cedar, chestnut and some juniper poles, in the inventory. These were tabulated or brought down to an average pole and priced on the basis of the cost of an average Class C pole as of June 30th, 1925; the adjustment on the 30 foot pole being $0.341; the adjustment on a 35 foot pole being $0.656; making the adjustment cost for a 30 foot pole of $7.021, and of a 35 foot pole $13.516.

To this amount was added the cost of shipping the pole to a central point, which is estimated for the entire system as being Columbus, Ohio, making the freight cost on a 30 foot pole of $1.526, and on the 35 foot pole of $2.235.

The total cost of the 30 foot pole, exclusive of supply expense, F. O. B. Columbus, would be $8.547, and on a 35 foot pole $15.751.

[fol. 3508] Six per cent of the cost of the material was added for the supply expense for the cost of handling the

pole to the store yard, amounting to $0.513 for a 30 foot pole, and $0.945 for a 35 foot pole.

Q. Where do you get the six per cent?

A. It was taken from the cost of handling materials to the company's store yard.

Q. And where did you get that?

A. That was taken from the Company's records.

Q. For what period?

A. Covering the three year period 1923, 1924 and 1925.

Q. All right.

A. As the Company's inventory did not show the miscellaneous materials that go in connection with poles, such as anchors, guys, cribbing strips, hub guards, painting and stepping, we ascertained that the average cost for those materials for the entire system per pole would be $1.549 per pole.

Q. How did you ascertain that?

A. The Company supplied us additional information other than what was contained in the inventory volumes showing an inventory of the materials that are found on the poles. We priced out these materials in detail and found that the average per pole was $1.549.

The total cost of the pole material F. O. B. Columbus, including miscellaneous material, for a 30 foot pole, would be $10.609, and for a 35 foot pole would be $18.245.

Q. How did you determine the labor cost?

[fol. 3509] A. The labor cost is based upon an analysis and studies of the construction of poles in the Ohio District and checked with such other information as we had in connection with this work.

The exhibit shows, under labor, unloading and handling to the amount of $0.362 on a 30 foot pole, and $0.402 on a 35 foot pole.

Hauling and distributing, that is, moving the pole from the yard and distributing it on the streets or highways at points where it is to be erected, amounts to $1.026 for a 30 foot pole, and $1.277 for a 35 foot pole.

Framing, roofing and shaving, 48 cents for a 30 foot pole and 60 cents for a 35 foot pole.

Q. What are those things? I never knew you shaved a pole.

A. That is trimming off the knots and irregularities in the pole. Also roofing the top, cutting it into a V shape and gaining or cutting the space for the crossarms.

Digging pole holes, for a 30 foot pole $1.925, and for a 35 foot pole $2.406.

And setting poles, that is, erecting the pole after the hole is dug, and lining it up, putting such earth around it as is necessary to have it stand erect, a 30 foot pole $2.299, and for a 35 foot pole $2.659.

Labor for placing miscellaneous material, $1.642 for a 30 foot pole, and the same amount for a 35 foot pole.

Giving the total direct labor charge on a 30 foot pole of $7.734, and on a 35 foot pole $8.979.

[fol. 3510] To this amount is added 17 per cent to cover plant supervision or items that were not included in the direct labor charges.

On the 30 foot pole the supervision amounted to $1.315 and on a 35 foot pole $1,526.

Making the total cost of the pole in place, for a 30 foot pole $19.658, and for a 35 foot pole $28.75.

Q. Now in what manner did you consider this work as being done in developing these costs?

A. These costs are based upon wholesale construction, or with the idea of reproducing the property over a five year period; that is, mass construction.

Q. Where did you get the figure of supervision, 17 per cent?

A. Supervision is based upon the analysis that was made of the Company's record for the supervision cost that the Company now has incurred or over the period of three years, 1923, 1924 and 1925.

Q. Now you have given in this exhibit the cost of a 30 foot pole and a 35 foot pole; how are those related to the costs of other sizes of poles as listed in Hagenah Exhibit No. 2?

A. I have the same details for all classes of poles shown in Hagenah Exhibit No. 2, but only submit this as an example of the work done. I can furnish it for the other sizes.

Q. Well, this is typical of the method that was pursued as to all of the poles?

A. That is true, yes, sir.

Q. Is there a difference in any of the factors; that is, is [fol. 3511] the labor on the same basis as that shown in this exhibit?

A. The labor is on the same basis, but as the height of the pole increases the cost of erecting the pole also in-

creases. The only two similar items contained in Dorsey Exhibit No. 1 would be supply expense of six per cent on the material and the supervision allowance of 17 per cent; also the allowance for miscellaneous material, which is taken on a per pole base, amounting to $1.549 per pole.

Q. Now this same method was pursued as to all of the poles listed in Hagenah Exhibit No. 2 at page 109?

A. That is true, yes, sir.

Q. Now I show you another exhibit which is entitled "Ohio Bell Telephone Company, Development of Unit Costs, Account No. 251, Toll Pole Lines", and ask you to state what that is?

A. The exhibit shows the detail unit costs of the construction of Class C 30 foot and 35 foot poles in the toll pole line account.

Mr. McConnaughey: I offer this in evidence and ask that it be marked Dorsey Exhibit No. 2.

And thereupon the Document last above referred to is admitted in evidence on behalf of the State of Ohio and is herewith submitted and marked Dorsey Exhibit No. 2.

Q. Now how does this exhibit compare with Dorsey Exhibit No. 1?

A. Dorsey Exhibit No. 2 is set up in the same form that Exhibit No. 1 is, with the exception that the adjustment to [fol. 3512] reflect the various kinds of timber in the toll pole line is slightly in excess of what it was in the exchange pole line as the classes of poles in the toll account are different.

The miscellaneous material item in the toll pole line is not as great as that in the exchange pole line, and instead of being $1.549 per pole it is $0.932 per pole.

The labor for installing the poles has been increased to take care of the board and lodging necessary to maintain the crews in the construction gangs in the field, which increases the labor units.

The item for supply expense on materials is the same as in the exchange pole line plant, six per cent.

A supervision of 17 per cent has been added to labor in the toll pole lines, being the same as that in the exchange pole lines.

The cost of a 30 foot pole in the toll line is $20.258, and the cost of a 35 foot pole is $29.378.

Q. And that method applies to all of the values of toll poles as shown in Hagenah Exhibit No. 2 at page 109?

A. Yes, sir.

And thereupon the further hearing of this cause was adjourned until Wednesday, December 15th, 1926, at ten o'clock A. M.

[fol. 3513] Wednesday Morning Session

December 15, 1926.

And thereupon the further hearing of this matter was resumed pursuant to adjournment.

Present:

Same parties by their counsel as at previous session.

And also VICTOR A. DORSEY, resuming the stand for further examination, in chief, continued his testimony as follows:

Examined by Mr. McConnaughey:

(Previous testimony read.)

Q. Mr. Dorsey, I will call your attention to an exhibit entitled "Ohio Bell Telephone Company, development of unit costs, account 243, exchange aerial wire," and ask you to state what that is?

A. The exhibit shows the detail computations in arriving at the final unit of the $27.427 for bare iron wire, size .109 and $36.967 for bare copper size .080. These units are per mile of wire erected in place.

[fol. 3514] Mr. McConnaughey: I offer this exhibit in evidence to be marked Dorsey Exhibit 3.

And thereupon the exhibit so last above offered is introduced and admitted in evidence on behalf of the State of Ohio and is herewith submitted marked Dorsey Exhibit Number 3 and made a part hereof.

Q. Just explain that exhibit, Mr. Dorsey?

A. The exhibit shows the cost of material, f. o. b. Hawthorne, Illinois, based upon quotations received from the Western Electric Company as of June 30, 1925. It also shows an addition of 4.7 per cent to the quoted price to take care of the Western Electric service and inspection

charge, making a total cost of a bare iron wire $9.38 per mile, and the bare copper of $18.208 per mile.

Mr. McConnaughey: I think it will not be necessary to state the figures in each one of these classifications, but just state the method and let the exhibit speak for itself as to the detail of figures.

Q. Where did you get the charge of 4.7 per cent for Western Electric Service and inspection?

A. That was furnished by the Western Electric Company in connection with their quotation on the wire both bare iron and copper, and also was checked against the records of the company in which The Ohio Bell Telephone Company were paying this sum.

Q. And the freight rate?

A. And the freight rate is based upon the charges for hauling the material from Hawthorne or other points to Columbus, being the central point of distribution for The [fol. 3515] Ohio Bell Telephone Company in the State of Ohio.

Q. You have used the same percentage of the material cost for supply expense, six per cent, as you heretofore testified to?

A. Yes.

Q. And the same loading of the direct labor, of seventeen per cent for supervision?

A. Yes, sir.

Q. Let me ask you if those percentages run all the way through all of your unit costs?

A. Yes, sir, they do.

Q. Let me ask you as a general question applicable to all of these studies, what you have done with the element of tool expense?

A. There has been added to the labor in the several classes, an item to cover the tools that were used by the respective gangs on the work that they were doing. The allowance for tool expense in the appraisal report ranges from 1.31 to in some cases as high as five per cent, the average being slightly in excess of 2 per cent.

Q. Where does that appear in these studies that you are now offering as exhibits?

A. It does not appear in detail in the studies that are offered; it has been forecasted under the items included under labor and included in the totals.

Q. Well, where in the sub title under labor does it appear?

A. In "Direct labor" there is an allowance for tool expense and on top of that the accepted per cent for supervision.

Q. I call your attention to an exhibit which is entitled "Ohio Bell Telephone Company, development of unit costs, account 253 toll aerial wire and ask you to state [fol. 3516] what it is?

A. The exhibit shows the development of the unit costs for toll aerial wire and is set up in the same manner as Exhibit Number 3, showing the details for exchange aerial wire.

Q. Does it include any item that was not included in Dorsey Exhibit Number 3?

A. It includes an item of 20 per cent on labor for sundry disbursements, which item is to cover the cost of boarding the men and taking care of them on toll line construction work.

Mr. McConnaughey: We offer this exhibit in evidence to be marked Dorsey Exhibit Number 4.

And thereupon the exhibit so last above offered is introduced and admitted in evidence on behalf of the State of Ohio, and is herewith submitted marked Dorsey Exhibit Number 4 and made a part hereof.

Q. I am referring again to Dorsey Exhibit Number 3. You have shown here your study of unit costs on bare iron wire size .109 and bare copper wire .080; state how the costs of other sizes of wire were shown in Hagenah Exhibit 2 on pages 69 and 70, have been developed?

A. They have been developed in the same manner, and I have details covering all sizes of wire shown on pages 69 and 70 of Hagenah Exhibit 2.

Q. Likewise in reference to Exhibit 4, you have shown here the development of unit costs on the same sizes of bare iron and bare copper wire, that is bare iron wire .109 [fol. 3517] and bare copper .080; state what relation this study bears to other sizes of wire as shown in the appraisal of toll aerial wire on Page 117?

A. The detail shown on Dorsey Exhibit Number 4 covers only two sizes of wire as contained in the inventory of the toll aerial wire. Details for the other sizes as shown on

page 117 of Hagenah Exhibit Number 2, I have, and can be supplied.

Q. Dorsey Exhibit Number 4 shows what, as the cost of material on these two sizes of wire, and what added for labor?

A. The material cost f. o. b. Columbus for size .109 bare iron wire is $12.539; the material cost for the bare copper size .080 is $22.079.

The labor of stringing one mile of bare iron wire is $13.947 making the total cost in place per mile of the bare iron number .109, $26.486.

The labor for stringing the bare copper wire is $13.947, making the total cost per mile of size .080 bare copper wire of $36.026.

Q. I next call your attention to an exhibit entitled The Ohio Bell Telephone Company development of unit costs, account 242, exchange aerial cable, and ask you to state what that is.

A. The exhibit for account 242, exchange aerial cable shows the detail costs for installing cables, 50 pair, 100 pair and 200 pair, 22 gauge, aerial cable.

Mr. McConnaughey: This exhibit is offered in evidence as Dorsey Exhibit Number 5.

[fol. 3518] And thereupon the exhibit so last above offered is introduced and admitted in evidence on behalf of the State of Ohio and is herewith submitted marked Dorsey Exhibit Number 5 and made a part hereof.

Q. Please explain that exhibit?

A. The cost of the 50 pair, 22 gauge, paper insulated, lead covered, single wrapped, per thousand feet, f. o. b. Hawthorne, Illinois is $149.50. This price is obtained from the Western Electric Company as of June 30, 1925. The weight of cable per thousand feet is 1,050 pounds, the weight of reel, doubled to allow for the return—that is the company must pay the return freight on that reel from points in Ohio to Hawthorne; the weight is for allowance of the reel doubled, that is the total weight of the cable and reel was 1,588 pounds. The freight to Columbus is at the rate of 29 cents per hundred pounds making a total of $4.60.

The Ohio Bell Telephone Company must pay damages to the reel and it is estimated that that would amount to $2.

per reel. The total cost of cable per thousand feet f. o. b. Columbus would be $156.60. The cost of messenger and rings per thousand feet of cable is $17.54. The quotations for the messenger and the rings, clips, shims and miscellaneous other material were taken from the quotations received from the Western Electric Company. The cost of miscellaneous material which I have just mentioned per thousand feet is, $14.41, making a total cost of the material exclusive of supply expense of $188.55 f. o. b. Columbus.

[fol. 3519] To this amount there was added six per cent. to cover storehouse or supply expense, amounting to $11.31. This making the total cost of the material f. o. b. storehouse, Columbus, $199.86.

The labor for hauling 1000 feet of cable is $1.629. Returning the reels to storeroom, removing them from street and placing them back for shipment to the Western Electric Company cost- $0.375 per thousand feet. Placing cable and messenger $74.91 making a total direct labor cost of $76.914.

To this amount there has been added 17 per cent. to cover supervision, amounting to $13.07.

The total labor cost exclusive of splicing for placing 1000 feet of cable is $89.98. The total cost of the material and labor for 1000 feet of 50 pair, 22 gauge cable, exclusive of splices is $289.84.

To this amount has been added 10 per cent. to cover splicing, amounting to $28.98.

The total cost of 1000 feet of 22 gauge, 50 pair cable, in place, is $318.82, the cost per foot being $0.3188.

Q. What does that study represent with reference to the appraisal of exchange aerial cable as listed in detail on pages 63 to 68, inclusive, of Hagenah, Exhibit Number 2.

A. The exhibit shows the detail unit cost, derived for 50 pair, 100 pair, and 200 pair, 22 gauge, paper insulated, lead covered cable. The details for all the other sizes and gauges can also be supplied.

Q. What method has been pursued with reference to the other sizes and unit costs?

A. The same method as outlined in Dorsey Exhibit [fol. 3520] Number 5.

Q. Where did you get your material prices on this account?

A. From the Western Electric Company.

Q. I next call your attention to an exhibit entitled, "The Ohio Bell Telephone Company, development of unit costs, account 243, exchange aerial wire; drops;" and ask you to state what that is?

A. The exhibit shows the cost for placing—both material and cost of labor—in placing the 125 feet number 17 twisted pair copper-steel drop.

Q. Why have you used that length of drop?

A. From the details of the inventory and such checks as were made in the field, we found that the average length of drop for the Ohio Bell Telephone Company was 125 feet.

Mr. McConnaughey: We offer this exhibit in evidence to be marked Dorsey Exhibit Number 6.

And thereupon the exhibit so last above offered is introduced and admitted in evidence on behalf of the State of Ohio and is herewith submitted marked Dorsey Exhibit 6 and made a part hereof.

Q. Please explain that exhibit, Mr. Dorsey?

A. The cost of 125 feet of Number 17 twisted pair, copper-steel is $1.638. The house brackets cost $0.044; insulator $.036; porcelain knobs $0.064; tie wires, $0.059; nails, screws, miscellaneous material such as extra tape, $0.05; making a total cost of the material f. o. b. Hawthorne of $1.891.

[fol. 3521] Q. Where did you get those prices?

A. Those prices were taken from a list furnished by the company and checked against Western Electric prices as of Ju-e 30, 1925.

The freight on the material for the drop, from Hawthorne to Columbus, Ohio, is $0.032.

Q. How did you figure that, Mr. Dorsey?

A. There is also added the weight of the materials found necessary for the service or 7.48 pounds and that amount at the rate of $0.42 a hundred figures $0.032.

The service and inspection charge of 4.7 per. cent was added to the materials, as that is the amount that is charged by the Western Electric for the services rendered in inspecting this material; making the total cost of the materials for one service of $2.012.

There was six per cent. added to cover storehouse expense amounting to $0.121. The total cost of the material f. o. b. Columbus was $2.133.

The labor to erect the service is $1.698, to which amount was added 17 per cent. to cover supervision, of $0.29, and making a total of $1.988.

The cost of Number 17 twisted pair copper-steel service or drop 125 feet long is $4.121.

Q. Where is that item shown in Hagenah Exhibit Number 2?

A. Shown on Page 70 of Hagenah Exhibit Number 2.

Q. Being a part of the exchange aerial wire classification?

A. Yes.

Q. As set up in the appraisal?

A. (No response.)

Q. I call your attention to another exhibit entitled "The Ohio Bell Telephone Company, development of unit costs [fol. 3522] account 244, exchange underground conduit, main," and ask you to state what that is?

A. The exhibit Number 7 shows the development of the unit cost for account 244, exchange underground conduit, main. The exhibit shows the unit detail costs for single tile, 4 duct and 6 duct and multiple tile 4 duct and 6.

Mr. McConnaughey: This exhibit is offered in evidence as Dorsey Exhibit Number 7.

And thereupon the exhibit so last above offered is introduced and admitted in evidence on behalf of the State of Ohio and is herewith submitted marked Dorsey Exhibit Number 7 and made a part hereof.

Q. Please explain that exhibit. Just take one of the columns and explain it with respect to the others?

A. The details for the single tile, 4 duct are material per trench foot, that is tile f. o. b. Brazil, Indiana, it is $0.3392; the weight of the tile per trench foot, 33.32 pounds; freight to Columbus, Ohio at $2.45 per net ton is $0.0408; muslin is $0.0181.

Q. What is that used for?

A. That is for wrapping the tile and the joints so that the cement or mortar will not get into it. The total cost of the material——

Q. Explain the next item as you go along—dowels?

A. There are no dowels in them, no dowels are shown on this single one.

Q. All right.

A. Making the total cost of material f. o. b. Columbus, [fol. 3523] exclusive of supply expense of $0.3981. To this amount is added 6 per cent. to cover the handling from yard or storehouse, amounting to $0.0239. The cement mortar for covering the tile is estimated at $14.25 per cubic yard making the cost of $0.0114.

Q. I understand that you have reduced all of these various items to the cost per trench foot?

A. Per trench foot, yes, making the total for the materials and the supply expense plus the cement mortar for the joint of $0.4334.

There is a loss and waste of four per cent. amounting to $0.0173 per duct foot and the concrete encasement for a duct run of one trench foot amounts to $0.2232, making a total cost of material f. o. b. Columbus for a four duct line of one foot length of $0.6739.

The material prices were obtained from the Western Electric Company as of June 30, 1925.

Q. Why is Brazil, Indiana, used as a shipping point there?

A. That is the place where a large amount of tile is manufactured,—in fact the central point from which the shipment of tile is made to the Central States. The labor for placing the material in the trench, excavating the trench, back filling it, removing the surplus earth, placing the concrete, is shown under labor per trench foot: Excavation $0.2898; backfill $0.0495; hauling surplus dirt, $0.0639; placing concrete, $0.053; hauling and laying duct $0.0901, making the total direct labor cost of $0.5463 per trench foot.

To this has been added 17 per cent to cover supervision, [fol. 3524] amounting to $0.0929. The total labor for one foot of four duct run is $0.6392. The total cost of material in place per trench foot $1.3131.

Q. What does this exhibit show in relation to the appraisal of exchange underground conduit as set forth on pages 71 to 88 inclusive of Hagenah Exhibit 2?

A. The Dorsey Exhibit Number 7 is the details of the unit cost data for single tile 4 duct and 6 duct, and multiple duct 4 duct and 6 duct, conduit; and details for the other formation and classes of duct have been prepared and can be supplied.

Q. What method was used with reference to the other items?

A. They were set up in the same detail based upon the costs of material obtained from the Western Electric Company and also upon the scale of wages obtaining in the district served by the company.

Q. I call your attention to another exhibit entitled, "Ohio Bell Telephone Company, development of unit costs, account 245, exchange underground cable, main," and ask you to state what that is?

A. Exhibit Number 8 shows in detail the development of the unit cost for exchange underground cable, main, in 50 pair, 100 pair and 200 pair, 22 gauge, paper insulated, lead covered, single wrapped.

Mr. McConnaughey: This exhibit is offered in evidence as Dorsey Exhibit Number 8.

And thereupon the exhibit so last above offered is introduced and admitted in evidence on behalf of the State of [fol. 3525] Ohio and is herewith submitted marked Dorsey Exhibit Number 8 and made a part hereof.

Q. Please explain the exhibit, Mr. Dorsey.

A. Take an example?

Q. Yes.

A. The cost of 1000 feet of 50 pair, 22 gauge cable, f. o. b. Hawthorne is $149.50. The weight of cable per thousand feet is 1,050 pounds; the weight of reel, allowed double, 538 pounds, making the total weight of cable and reel of 1,588. The freight rate from Hawthorne to Columbus is $0.29 a hundred and on the weight of 1,588 pounds amounts to $4.60.

The injury to reel is estimated at $2.50 per thousand feet, making a total cost of cable per thousand feet f. o. b. Columbus of $156.60.

To this amount has been added 6 per cent. to cover supply expense amounting to $9.40, or a total cost of 1000 feet 50 pair, 22 gauge cable in storeroom at Columbus of $166.00.

The labor for placing in the ducts 1000 feet of 50 pair, 22 gauge cable is as follows:

Hauling cable to street, $1.629, return reel to storehouse, $0.375; rodding ducts and pulling in cable $81.33, making a total direct labor cost of $83.334. Supervision of 17 per cent. on the direct labor cost amounts to $14.167, making the total labor cost exclusive of splices $97.501. The total cost of the material and labor for placing a thousand feet of 50 pair cable is $263.50.

To this amount has been added ten percent. to cover [fol. 3526] splicing, amounting to $26.35, making the total cost of material and labor in place for a 50 pair cable of $289.85, or a cost per foot of $0.29.

Commissioner Maullar: Where does that differ from Dorsey's Exhibit Number 5?

The Witness: Number 5 is for exchange aerial cable and the number 8 is for exchange underground cable.

Commissioner Maullar: Oh, I see now—underground.

Q. How is this exhibit related to the prices that are shown for exchange underground cable as set forth on pages 89 to 107 inclusive of Hagenah Exhibit 2?

A. Dorsey Exhibit Number 8 shows the detail unit costs for 50 pair, 100 pair and 200 pair cable, 22 gauge, as shown on pages 89 to 107; and the remaining sizes of cable, we have the same details prepared for them and if required can be submitted.

Q. What method was pursued with reference to the other items?

A. The same detail costs were prepared for the other items as shown on Exhibit 8.

Q. In general, Mr. Dorsey, from what source have you obtained the material prices that you have used in building up these units?

A. The material prices in nearly all instances were obtained from quotations from the Western Electric Company.

Q. When they were not obtained from that source, where did you get them?

A. They were obtained from manufacturers that manufactured that class of equipment only, and not supplied through the Western Electric Company.

Q. And as of what dates were these prices obtained?

[fol. 3527] A. As of June 30, 1925.

Q. And what scale of wages have you considered in fixing your unit costs?

A. The scale of wages used in preparing the unit costs are those paid by The Ohio Bell Telephone Company to the several classes of employees in each class of work as of June 30, 1925.

Q. How have you determined the amount of labor that was involved in these various operations?

A. The amount of labor is based upon a gang set-up for

the several operations necessary for the construction of the different classes of property, on information gathered from the Ohio Bell Telephone Company and also checked against information prepared by our office and checked against actual performances on other telephone and electric light properties.

Q. And in what manner did you consider the work as being done, in working out these unit costs?

A. The unit costs are prepared and reflect the costs of reproducing the properties of the Ohio Bell Telephone Company under mass construction.

Q. Mr. Dorsey, you have not furnished Exhibits as to every single class of property as I understand. I would like to ask you in general how you have worked out the unit costs on other classes of property that have not been covered by these exhibits, for instance, toll underground cable.

A. Toll underground cable, unit cost, would be the same as exchange underground unit cable costs for the same kind and class of cable.

Q. How about toll underground conduit?

A. Toll underground conduit, unit cost, would be the same [fol. 3528] as exchange underground conduit costs because a great many of the duct runs are together.

Mr. McConnaughey: I guess that covers that all. All right, that is all.

Mr. Burr: We will reserve our cross-examination of Mr. Dorsey with the exception that this afternoon we may wish to ask him some preliminary questions in order to enable us to further check his exhibits.

Mr. McConnaughey: Mr. Hagenah may resume the stand.

[fol. 3529] And also W. J. Hagenah, resuming the stand, continued his testimony as follows:

Examined by Mr. McConnaughey:

Q. Mr. Hagenah, you were asked yesterday by Mr. Burr to indicate the accounts in the inventory in which you consider that obsolescence is present; can you state what those accounts are at this time?

A. It is present only in account Number 221, central office equipment. As to the other accounts, my examination would indicate that there is no obsolescence. It is present

only in a minor degree in the central office equipment, but I have given effect to it where I have found it.

Q. In reference to your appraisal, have you considered and checked the reasonableness of property extensions made during recent years, for the past three or four years?

A. Yes, sir.

Q. What is the result of your consideration of that subject?

A. I find that the expenditures for property extensions during the last four years have resulted in a cost per net station gained, ranging from $378.00 in 1925 to $504.00 in 1924. These results were obtained by ascertaining from the company's annual reports the net gain in stations each year. These records also showed the fixed capital expenditures for additions each year, and the increase was then expressed in terms of cost per station gained. This on the surface indicates a large cost per station gained but is explained by the fact that so many of the extensions were [fol. 3530] made in outlying territories, suburban regions, and smaller communities, as is inevitably the case in every large and growing telephone system.

When a pole line or a cable or an underground unit is built into a new section, it is necessary to anticipate the ultimate load which will be carried and the management must determine where it ceases to be economy to anticipate the future and provide only for immediate needs and leave further extensions when the service becomes more developed. That this rather large cost per station is not unusual is indicated by a further computation. When the total plant expenditures for capital purposes are expressed in terms of total stations in service; it then appears that the book cost per station at the close of 1921 was $173.00. At the close of 1922, it was $179.00. At the close of 1923, it was $183.00. At the close of 1924, it was $191.00; and at the close of 1925, it was $200.51.

This indicates a gradual increase in the book cost of the property per station, at the close of the year, of approximately $28.00 per station over the five years. It is accounted for by the fact that each year an increasing amount, of the total fixed capital, has been expended on the high level of labor and material prices which has obtained since 1917; and is further explained by the fact that each year a further proportion of that part of the plant that was

built prior to 1917 is being retired and replaced with high-cost equipment. The situation I find is normal.

[fol. 3531] Q. What has been the trend of prices applicable to telephone equipment and construction prior to and since 1917 which you have indicated as the period of high prices?

A. Labor and material costs for construction purposes and also for operating purposes have increased substantially since 1913, the largest increase, in fact, almost a violent increase occurred in the latter part of 1916 and 1917. This is true generally of labor and material prices, but is more marked of all public utility construction because there is present in such construction a larger percentage of labor than is present in the all-commodity index number recorded by the United States Bureau of Labor.

As wage rates have increased more rapidly and continued at the higher level, longer than commodity prices, the tendency has been for public utility construction costs to rise more rapidly than the price-level generally. Construction cost for many lines of public utility work and especially telephone property is today from 55 to 60 per cent. above the price level of 1913.

Q. Have you made a study of labor and price conditions, from which you have formed a judgment as to the probable price- and wage-levels during a reasonable period in the immediate future?

A. I have.

Q. State your conclusions and the reason for them?

A. It is my opinion, based on an extended study of this subject, that the present price-level is likely to continue for some years. An analysis of the underlying and world-wide economic influence, which affected commodity prices, indicates that with few exceptions, the price-determining-[fol. 3532] factors are at this time stabilizing prices on a level which has obtained since the middle of 1922. There are of course influences, such as improvement in technical processes, inventions, mass production in certain industries, which will tend ultimately to a lower price-level. This is especially true with respect to commodity prices, but not so true with respect to labor prices. Insofar as a judgment can now be expressed, based on an interpretation of existing factors, the present price-level with only seasonal and cyclical fluctuations, will continue for as far as safe forecasts can be made—that is probably three years. That

is three years is the maximum period. Some authorities state it as nearer five years. Beyond that it is difficult to state at the present time what the price-movement will be.

Q. State the reasons for that conclusion?

A. In order to support this judgment, briefly, I will state that there are eight controlling factors or influences now at work which tend to sustain prices.

The first of these—and probably the most important—is the high-level of wages that now obtains in practically every industry and for every occupation. Wage levels have now reached the highest peak recorded in the history of the United States. In organized labor, they exceed by 14 per cent. the high peak of wages that was reached in 1920 before the initial deflation took place. Wages generally are also today at the highest level in the history of the United States. The conditions which have brought these results about are:

[fol. 3533] First, the great strengthening of the organized labor movement; the increase in membership in these unions has been over three million, three hundred thousand, during recent years. Prior to the war, the purpose of organized labor was to increase its membership in all industries as far as possible without any well-designed strategy to bring about a maximum influence. As a result of the war and the extension of labor influence interests, the policy during recent years has been to gain control of the key industries. It was the opinion of the labor unions that if these key industries could be controlled, the dependent industries would indirectly follow the control, and that has been worked out in a surprising degree. Statistics show that such key industries as mining, building trades, the metal industries, transportation, and certain lines of public utilities are today influenced by organized-labor-control to such a degree that an interruption there will affect practically — the industries of the United States in a remarkably short period of time.

From 1910 to 1923, the increase in membership in the key industries alone has been from 868,000 members to 3,780,000 and I need only call attention to the paralyzing effect which developed in all lines of productive industry because of the strike in the coal mining regions and in the transportation and shop trades, two and three years ago.

Aside from the dominating influence and increasing power

of organized labor, there is the increase in the wage rate which this main movement brought about.

A comparison of the extremely high wage received which [fol. 3534] now obtains, is enough to indicate that it will be many years before there will be a material deflation or a reduction, if you wish, in the wage rate per employee.

The average, as reported by the United States Government in 1869 was only $302.00 per person. In 1904 this had increased to only $477.00 per employee. In 1914, before the great increase took place, the average wage rate in the United States was only $579.00. In the next five years it more than doubled. In 1923, for which complete statistics are available, the average wage rate was $1,254.00 and in the recent government report, it is stated that the wage level now is the highest in American history.

While some of these increased labor costs have been offset by labor-saving machinery and the use of substitutes, the effect of this change has been offset by the new industries which have been developed since the war, which have absorbed many hundred thousand employees and prevented a balancing of labor costs, and I need only call attention to the great increase in the automobile industry, which, in 1914, was a negligible factor in the labor market, but in 1925, was the second largest industry in the United States. Allied with this, is the rubber industry and the oil, transportation, and refining industry.

There are further enormous demands for labor from building construction industries and the high standard of living which these wages has created has brought about an enormous expansion in manufacturing industries which supply the public needs. I need not go into details as to the [fol. 3535] restriction on immigration and the effect it plays in high labor costs. The number of immigrants which used to be from two million to three million five hundred thousand, in every five-year period is now, under the new restrictive legislation, reduced to only one hundred fifty thousand—which is a negligible factor.

Mr. Burr: One hundred fifty thousand per five year period.

The Witness: One hundred fifty thousand per year.

Mr. Burr: Per year.

The Witness: The second factor which is tending to keep up wages and prices is the high level of rents. This of course is due to the wage scale that obtains, the high material prices which enter into the industry and the enormous increase in taxes. Taxes today take by far the larger percentage of the total income of buildings, apartment houses, than in previous years, and it is necessary to obtain a high rental in order to cover these fixed charges.

The third factor which is tending toward keeping up wages and prices is the high taxes. The interest rate on the Federal debt alone is today larger than the total indebtedness prior to 1914; and the same is true of the indebtedness of states and many cities. In the last two years alone, local indebtedness has increased over two billion dollars, giving a state, municipal and county indebtedness of thirteen billion dollars, which requires twelve per cent. of the total tax collections of the states, cities, counties and school districts.

[fol. 3536] The fourth factor which is operating to stabilize prices is the correction of the price-maladjustment growing out of the war. A study of the Bureau of Labor reports will indicate that for those classes of prices where the highest stimulation took place, there has been a steady recession in the last four years. Those industries which failed to share in the movement in prices have, during this period, experienced increased prices, so that the tendency has been for the excessively high prices to come down and for the low prices to raise, which explains the flattening of the price-curve since 1922, where the variation has been but a few percentages above what appears to be at present normal, in fifty per cent increase over 1913.

The next factor which is present to stabilize prices is the increase in the gold supply which is treated at length in financial reports, and I will not go into the details because it will take up unnecessary time. I can go into them if desired.

We are all acquainted with the improvement of the foreign situation, which is the sixth factor in stabilizing prices. The same conditions which are in effect here in bringing about a price-level of approximately 150 are present in the leading countries of Europe, the Index Number of England, Germany, Holland, Switzerland, Belgium and the Scandinavian countries, and Canada, Australia, is substantially the same as ours. In Italy and France, owing to the inflation

of the currency, the price level is very much higher. Because it has involved the price movements throughout the world, there is today no country that has a low price-level [fol. 3537] and therefore is unable to bring about a recession in prices in other countries through its undisputed exploitation of competitive markets.

The seventh factor, which will prevent extreme fluctuations in prices and sudden declines, is the Federal Reserve Bank System. Prior to 1913, we had a highly inelastic currency system, which failed completely in periods of money stringency, making a bad situation more acute. The Federal Reserve Board has announced that it is its purpose to take into consideration fluctuation in prices, and, by controlling the credit machinery, or at least influencing it largely, it can prevent drastic declines, and can also prevent inflation in basic industries.

The eighth factor which is present in stabilizing prices is the co-operation of the government with manufacturers in preventing extreme fluctuations in the business cycle. The Cabinet heads have indicated and conferences have been held to bring about the steady employment. Through the efforts of the president and the department of commerce, industries have not been permitted to bid against one another to rush up prices and labor. The government itself has postponed its program so that a flattening of the demand and preventing the extreme booms and depressions, may be avoided.

These eight factors could be enlarged upon, but they are accepted generally by Economists and Financiers as present influences which tend for a maintenance of the present price level for as long a period as we can safely look into the future.

[fol. 3538] Q. What is the price level of telephone equipment and construction as compared to 1913?

A. The level in individual companies is not far from 160 per cent, that is it is 60 per cent above the index basis of one hundred for 1913. In individual companies it will be higher or lower, depending upon the percentage at which different classes of property are present. In some instances it is as high as 75 per cent above the pre-war level.

Q. What has been the effect, if there is any effect, of the use of labor-saving devices in telephone construction and operation, upon telephone costs?

A. There have been some improvement in construction methods, but the nature of the work does not lend itself to labor-saving devices and mass-production-methods in anything like the degree that is present in manufacturing.

In underground construction, it is possible today, through the use of pneumatic-cutting tools to remove pavement more cheaply than was possible previously. In some instances trenching machines can be used. Pole digging machines can also be used. Concrete-mixing and hoisting-equipment results in lower costs for the some class of work than was present in 1913. These costs are in each instance offset by the high cost of the machinery that is used and the rapid consumption of that machinery in use.

The purpose has been as much to get away from an unreasonable labor situation as it has been to obtain immediate savings in dollars. There is of course some improvement in costs resulting from these improvements in meth- [fol. 3539] ods, but they are not present in public utility construction to the extent that they are in many classes of work.

Q. How has that same element of the use of labor-saving-devices affected the cost of telephone operation?

A. There have been little improvements with these devices in telephone operation except what we would call the general progress in the Art of Telephony. To some extent we get away from certain labor problems through the use of more mechanical appliances, possibly automatic apparatus, but there are many problems that have to be worked out there and I am not ready to say that the answer to that problem has been definitely reached.

Q. In connection with your investigation of this property and the accounts of the company, have you given consideration to the earnings of the company?

A. I have.

Q. Now, are you prepared to discuss them?

A. (No response.)

Q. Have you also given consideration to the question of the relations, the inter-corporate relations of this company?

A. I have.

Q. That is the relation of this company with the American Telephone and Telegraph Company?

A. I have.

Q. Will you discuss that situation?

A. I have given consideration to the relations between

the Ohio Bell Telephone Company and the Western Electric Company on the one hand and the parent-controlling company, the American Telephone and Telegraph Company, on the other. Under these contractual relations, the Ohio Bell [fol. 3540] Telephone Company purchases its supplies or receives them through the supervision, purchase or inspection of the Western Electric Company. At first sight this relationship might indicate a possibility for exploitation of the operating utility. I have had occasion in this case, as well as in other cases wherein I have represented either cities, commissions or telephone companies, to satisfy myself as to the effect of this control; and I am able to state that the relationship is a fair one, both to the utility and to the public. The companies receive the advantage of large-scale purchases and warehousing facilities, which they would hardly be able to provide for themselves, without increasing their own operating and construction costs.

One instance of the favorable working of this contract during recent years may be cited. The Western Electric Company is one of the largest purchasers of copper. Since 1920, there has been a gradual increase in the price of copper. The price was as low as eleven cents following the war, when the government released an enormous surplus stock of over a billion pounds. This has been gradually absorbed and the market has risen to between thirteen and fourteen cents per pound. The Western Electric Company has purchased copper at low prices and has given the utilities the benefit of these low prices, even when the market price for copper at the time of the transaction, was greater. This of course operates in the reverse fashion in a declining market, but we have had little to do with declining prices in commodities, so that for a number of years, the public has directly benefited through the large-scale purchases of [fol. 3541] the Western Electric Company, and its huge working capital.

I have checked the prices which are charged by the Western Electric Company to subsidiary Bell Companies in the United States and prices charged by the Western Electric Company to wholly independent telephone companies in foreign countries, and there is no abuse of the intercorporate relations against the Bell Companies in the United States.

The relations between the American Telephone & Telegraph Company and the subsidiary companies are some-

what different. Under the contract generally known as the four one half per cent contract, the parent company collects from its subsidiary companies each year a charge equal to four one half per cent of the gross earnings of the operating companies. In return for this payment, the subsidiary company receives two classes of benefits. In the first place, it receives the use of certain equipment owned by the parent company and consisting of the transmitter, receiver and coil.

If the subsidiary company were required to purchase this apparatus it would of course require capital on its part, as well as the carrying charges thereon. To that extent, the company is relieved of a part of what might be called an immediate telephone function.

The additional service consists of engineering, accounting, legal and other technical supervisory aid and in construction and operation of its properties, and assistance in financing corporate needs.

The charge thus collected from The Ohio Bell Telephone [fol. 3542] Company during the calendar year, 1925, was $1,274,052.29. The services which the company receives of a technical, financial, legal and accounting nature are of great value and are undoubtedly the cause of the widespread development of the telephone and the efficient state to which the industry has been developed in this country.

There is, however, a feeling, that the payment exacted for this service is an extremely liberal one, from the standpoint of the American Telephone and Telegraph Company. Unfortunately we are not supplied with information on which the four one half per cent charge is based. We do not know how large an expense the parent company incurs in furnishing this service, the value of which service is generally admitted.

The contract has been widely criticised because of the indefiniteness of its terms, so far as the public is concerned. Commissions have struggled with it in practically every telephone-rate case; in some instances attempts have been made to exclude a part of this charge on the ground that a portion of the sum collected was nothing more than an increased revenue collected by the parent company from operations, and should in fact be considered as an addition to the surplus of the company.

It has, however, been held by the United States Supreme Court that the contract itself is a lawful one and that the

parent company and subsidiary company had the authority to make such contract; that the entering into this agreement is a matter of management and not one of regulation, [fol. 3543] for which reason the engineer, and I think also the commission, is precluded from going into the specific details of the contract which are withheld from us by the American Telephone and Telegraph Company.

We are, however, free to ascertain the character of the service received by the subsidiary company and to provide for a proper distribution in the accounts of the company of the payment, for the benefits received.

I have made an analysis of the service received under the 4½ per cent contract and have endeavored to set up their nature, the amounts related thereto, and to indicate the accounts to which these amounts should be charged.

Hagenah Exhibit 1, setting forth the accounts of the company, indicate that while this expenditure of $1,274,052.00 is not included in operation expenses, it is carried as a deduction from those earnings, and therefore tends to reduce the net earnings which the company would otherwise report. If it should transpire that the payment is a reasonable one for the services performed, it would have to be retained in the accounts in substantially the form in which it is now carried. If, however, any part of it is an improper charge to operation, it should be deducted and a credit to that amount, made to the net earnings of the company. By the amount of such credit, the company is now, through its accounting of this charge, under-stating its net earnings from telephone operation in this State.

In my analysis of the payment I have first attempted to show what proportion of the $1,274,000.00 paid in 1924 is related to the item of instrument rentals. The informa- [fol. 3544] tion on which my study is based is taken from the testimony and exhibits of Mr. Rhodes, a witness from the American Telephone and Telegraph Company, and Mr. Kositzky, the chief engineer of the Ohio Bell Telephone Company. I have reduced the——

Q. That is their exhibits in those case?

A. Yes. I have reduced my study on this subject to the form of an exhibit which I can explain.

And thereupon the exhibit so last above produced is for the purposes of identification marked Hagenah Exhibit Number 5.

The Witness (continuing): And show what portion is unquestionably related to operating expense.

Hagenah Exhibit Number 5, shows the proportion of the annual four — one-half per cent payment made in 1925 related to the rental of instruments. The first item in this exhibit shows the total payment of $1,274,052.00 to which I have already referred. The apparatus received under the terms of this contract from the American Telephone and Telegraph Company is the transmitter, receiver and coil. The cost of this apparatus from the Western Electric Company is $4.50 per set. This is a few cents per set less than the price charged for apparatus designed to perform the same service and manufactured by the Independent Telephone Equipment Companies, such as the Kellogg Switchboard Company and the Stromberg-Carlson Company.

The table next shows the determination of the carrying [fol. 3545] charges or annual costs related to this set. I have computed the item of return on the investment at seven per cent, which is $0.315 per year. I make the distribution charge five per cent, based on the testimony of Mr. Rhodes. I place the maintenance at two per cent per year or $0.09. I provide for the ordinary contingencies which are inherent in the telephone business at two per cent or $0.09 per year. Administration is placed at one per cent or $0.045 per year, making a total of $0.765 per year as the carrying cost of one set of instruments costing $4.50.

It is necessary, to insure adequate and prompt service, under normal operating conditions, that the company carry and have in service, because of the constant overhauling of instruments, and changes in their installation, some surplus sets. This works out to be 1.054 sets per average station in use. Multiplying this increased factor by the carrying cost per year, there is a true carrying charge of $0.806 per year per station.

There is, however, a surplus stock which must be carried besides those which are in the floating stage of operations. This, according to the warehouse records and experience of the subsidiary companies, is approximately six per cent, which I have verified through the records of this company. Allowing for the six per cent excess cost there is a charge of $0.27 in addition.

Q. 27 cents, Mr. Hagenah?

A. Twenty-seven cents. The carrying charges relating to this additional stock is $0.027 per year, making the total [fol. 3546] annual charge including the number of sets in the warehouses and in the continuity of service $0.833 per station. The average number of stations in service during 1925 was 523,373. This number of stations multiplied by the annual carrying charge per set results in a total charge of $435,969.71. This is beyond question a proper operating charge. If the American Telephone and Telegraph Company were not to furnish this service, the Ohio Bell Telephone Company would directly incur substantially this amount because it would have to purchase that number of instrument sets which is here set forth and to that extent, its appraisal would be increased and its maintenance, depreciation and related charges correspondingly increased.

This amount, therefore, is no burden on the public because it appears as an operating charge instead of entering the final set-up as a charge related to the fixed capital and operating expense.

If this amount is deducted from the total sum paid to the American Telephone and Telegraph Company, there remains the large sum of $838,082.58 to cover engineering, legal, accounting, and financial supervision and assistance.

The question now is, not whether this is a reasonable sum in total, because we are unable to determine that, having no access to the books and records of the parent company. We are also unable to show bad faith or fraud in the making of the contract between the parent company and the subsidiary company.

We are, however, able to determine whether this sum [fol. 3547] should be charged entirely to operating expenses. If any part of it is related to charges other than operating expenses, the present practice results in an improper burden against the telephone users of this company.

One cannot read the testimony of any of the witnesses of the American Telephone & Telegraph Company and of The Ohio Bell Telephone Company in this case without being impressed with the large amount for the service performed by the parent company under this contract, that is, in fact related to construction rather than to operation. The elaborate research work, the testing of new equipment, the making of fundamental plan studies to bring

about the most economical expenditure of additional capital in plant extensions and the supervision of all construction is obviously a construction overhead charge and should not be charged against operation; also the supervision of construction accounting should be charged against construction. In like manner, the service performed in aiding the financing of the company to cover additional plant is a construction charge and not an operating expense; financing is not related to maintenance or operation.

An examination of the relative expenditures for construction and operation gives us some basis for distributing this annual charge.

It is one of the basic rules of cost-accounting, and also an elementary rule, that overhead expense or expense burdens should be distributed to the class of work and the individual accounts benefited thereby.

[fol. 3548] It is of course difficult to determine from any one year a basis that would be correct for distributing this account at all times, certain years, conditions requiring larger proportion of expenditure for construction than other years. The same is true with maintenance and reconstruction.

I am satisfied that this amount should be distributed between construction expenditures and operating expenditures and the basis thereof is to some extent indicated by the accounts set forth in Hagenah Exhibit Number 1. This exhibit shows the classified expenditures for construction and for operation for each complete calendar year from 1921 to 1925, both inclusive. In 1922, the Ohio Bell Telephone Company expended——

Q. Mr. Hagenah, you said, "Each complete year from '21 to '25 inclusive," you have not a complete year for '21 have you?

A. No, it would be '22. '21 is not a complete year. That is right. What was that sentence I had not finished?

(Previous uncompleted sentence read as follows:) "In 1922, the Ohio Bell Telephone Company expended"—expended for construction $5,341,126.00. Its total operating expense including the appropriation for depreciation charged into operating expense was $16,721,485.00.

If this comparison is used as the basis for distributing the service proportion of the four one half per cent. charge

construction would be charged with 24.21 per cent., and operation 75.70 per cent.

It is, however, obvious that comparatively little of the [fol. 3549] four one half per cent. charge relating to service can be assigned to the traffic expense, which has a very large factor of direct labor, which operates under routine, comparatively simple, and don't require the amount of technical supervision that is related to a similar expenditure for construction purposes. The most comparable basis would be to take the total expenditures for maintenance and the total depreciation construction as offsetting the construction proportion.

The maintenance and depreciation represent a total of $8,203,076.00. If, therefore, we approach a comparative basis as to the nature of the expenditures and the amount of expense burden relating thereto, the construction proportion becomes 39.43 per cent. and the maintenance proportion 60.57 per cent.

In 1923, the company expended for construction three million, two hundred ninety-seven thousand——

A Voice: Telephone for Mr. Hagenah.

The Witness: May I be excused and answer it?

Commissioner Poor: Yes.

We are so near the noon hour, we will recess at this point until 1:30.

And thereupon a recess was taken until 1:30 P. M. of same day.

[fol. 3550] Wednesday Afternoon Session

December 15, 1926.

And thereupon the further hearing of this matter was resumed pursuant to recess.

Present:

Same parties by their counsel as at previous session.

And also W. J. Hagenah, resuming the stand, continued his testimony as follows:

Examined by Mr. McConnaughey:

(Previous testimony read as follows:) "In 1923, the company expended for construction, three million two hundred ninety-seven thousand"——

The Witness: I will give you the rest of the figures.

($3,297,846.78)

Eight hundred forty-six dollars, seventy-eight cents.

Q. Mr. Hagenah, will you resume your statement?

A. The total expenditures for operation during 1923 were $18,425,913.00.

On this basis of combined expenditures, the construction charges represented 15.18 per cent. and the operating expenses 84.82 per cent. If we compare the construction [fol. 3551] expenditures with the maintenance and depreciation expenditures, the ratio is 26.9 per cent. for construction and 73.10 for operation. In 1924, the construction expenditures were $6,153,910.00, and the operating expenses were $19,592,735.00. Of those combined expenditures 23.9 per cent. were for construction and 76.1 per cent. for operation. If the construction expenditures are related to the maintenance and depreciation expenditures, the construction proportion is 39.42 per cent. and the operating proportion is 60.58 per cent.

In 1925, the construction expenditures were $10,424,095.00. The operating expenses were $20,592,054.00. Now, these total expenditures 33.61 per cent. were for construction and 66.39 per cent. for operation. Relating for this year, the construction expenditures to the maintenance and reconstruction or total depreciation charge, the construction proportion is 51.54 per cent and the operating proportion 48.46 per cent.

The total construction expenditures for the four years enumerated is $25,216,978.00. The total operating expenses for the four years is $75,332,187.00.

On the basis of the four year construction and operating expenditures, 25.8 per cent. represents construction charges and 74.92 per cent. operating expenses. Relating for the four year period, the construction expenditures to the maintenance and depreciation charges the construction percentage is 40.91 per cent and the operating proportion 59.09 per cent. on the basis of this average for the four year period, in which there are represented years of heavy construction, [fol. 3552] a year of heavy construction and one year of light construction, and considering only the total construction expenditures and the maintenance and depreciation charges, the apportionment should be made on the basis of providing the excess payment to the American Telephone

Telegraph Company after deducting the instrument rental proportion on the basis of one half for each class of service.

In years of high construction, 1925, as an instance, the construction account would call for somewhat more than 50 per cent. and the operating charge less than 50 per cent.; in years of light construction, as in 1923, these positions would be reversed.

For 1926, the construction expenditures more nearly equal the condition which obtained in 1925, and will again, if the remaining few months of 1926 are fairly represented by the conditions which precede, justify the apportionment of 50 per cent. to operation and 50 per cent. to construction.

On this basis of sub-division, there should be charged to the construction account of the company for overhead expenses in the way of engineering, accounting and law expenses, and assistance in financing, one half of $838,082.00, or $419,041.00. This amount when charged to construction expenses and credited to operation will result in an increase in the net earnings available for return on the investment of $419,041.00.

Q. Have you any other adjustment to suggest based upon your study of the accounts of the company?

A. Yes.

Q. State what it is?

A. A further adjustment is required to give proper ac- [fol. 3553] counting effect to the situation disclosed in Morse's Exhibit Number 5 and Number 6.

It will be noted from Morse's Exhibit Number 5, which is entitled "Reserve for accrued depreciation from September 21, 1921, to December 31, 1925," that the charges to operating expenses and credited to the depreciation reserve range from $4,231,844.00 in 1922 to $5,055,589.00 in 1925.

The total credits to the depreciation reserve in 1922 were $4,455,921.00.

This amount increased in 1923 and again in 1924 and reached a still higher total credit in 1925, amounting to $5,273,284.77.

As against these credits to the depreciation reserve, there were debits ranging from $2,065,394.00 in 1922 to $4,370,078.00 in 1925. The credit balance in the depreciation reserve on September 21, 1921, was $7,226,759.00. This amount has increased each year because the credits to the depreciation reserve exceeded the debits.

In 1922, the credit balance had grown to $9,617,316.00. At the close of 1923, it was $10,658,312.00. At the close of 1924 it was $11,826,059.00. By the close of 1925, this balance had grown to $12,729,276.00.

According to Morse's Exhibit Number 5, the operations of the company during the last four years and three months have resulted in charges against operation substantially in excess of the amounts expended for reconstruction purposes. This is not improper and is a natural result to be expected and attention may be called to the fact that the increase in the reserve has been slowing down from year to year, due to the fact that the increase in the reserve has been [fol. 3554] slowing down from year to year, due to the somewhat larger expenditures for reconstruction which the company has made. There remains, however, a steadily increasing credit balance.

I have examined the depreciation methods followed by the company in its accounting and also in its studies calculated to show the annual provision to be made for depreciation as a charge against operation. I am not disposed to criticise the details entering into the method or the principle or the conclusion reached as to the charge against operating expenses. I am in no position and possessed of no information which would enable me to criticise the charge. The fact that the charges against the reserve are growing more rapidly than the credits to the reserve would indicate that there is no justification at the present time to disturb the charges against operation. There is, however, an immediate question which arises in connection with the accounting for the funds which have been set aside and charged against operation and for the benefit of maintaining the integrity of the investment.

According to Morse's Exhibit 6 entitled, "Sources and application of funds" there is included in the fixed capital of the company, which has been analyzed in Hagenah Exhibit Number 1, the sources from which the construction capital has been obtained. It will be noted that these sources consist principally of the following:

From the sale of capital stock.

From the sale of bonds.

From advances made to The Ohio Bell Telephone Com- [fol. 3555] pany by the American Telephone and Telegraph Company, and

By borrowing from the depreciation reserve.

A further item, and of smaller significance, is the investment of the company's corporate surplus in property.

Since the amount set aside for depreciation and the accumulation of the depreciation of the reserve is not only proper, but necessary, both from an operating standpoint and recognized by the statutes of Ohio, only one question arises, and that is whether the effect of the particular method of accounting for this reserve, adopted by the company, is proper.

The company, according to law, is entitled to a reasonable return on the fair value of its property. Out of this return, it is required to pay its interest charges on borrowed money, interest on the money advanced to it by the American Telephone and Telegraph Company, for instance on the stock of the company, and whatever other charges grow out of the borrowed money.

According to Morse's Exhibit Number 6, the surplus of the depreciation reserve or its credit balance has been invested in property. This is good business practice; under the statute and practice of public utility regulation, the utility is permitted to invest the credit balance of its depreciation reserve in its own securities, in securities of other companies; it can invest the money subject to check in a current banking account or it may invest the money in its own business. If the company invested this credit balance in its own bonds, it would be earning for illustration, ap- [fol. 3556] proximately five per cent. which income should be credited to the reserve. It is an old accounting rule that the earnings of a specific fund belong to that fund. If the company had invested this money in bonds of other corporations or in municipal bonds, the income from such investment would in like manner belong to the depreciation reserve. In both instances, this large interest-income during the year would operate as a reduction of the depreciation charge to be made against operating expenses and to the extent that interest was earned and credited, to the depreciation reserve, there would in effect be a reduction of operating expenses and a corresponding increase in the net earnings available for return. If the company had invested this money by deposit in the banks, it would have earned some measure of interest, possibly two per cent., and probably as much as three per cent. Investing it in its own business it is receiving the benefit of borrowed money and so long as the property thus acquired through the invest-

ment of the depreciation reserve balance is included in the value of the property on which the public is asked to pay a reasonable return, it follows logically that the company should account for the interest so received out of the portion of the return available to that part of the property so acquired.

It is not prudent business to allow twelve million dollars to lie idle without earning a return, and if the money is invested and a return is produced, it belongs to the depreciation reserve and not to the stockholders.

Any money borrowed from the depreciation reserve would [fol. 3557] be subject to the ordinary conditions surrounding a call loan, and the company cannot safely invest the money in a fixed investment. There may at any time be a call for a substantial amount of capital for replacement purposes. Storms, fires, floods, etc., which have visited other telephone properties may visit this property. The fund has been accumulated for exactly that purpose, along with current replacements.

If the credit balance is invested in high-grade bonds, these can be promptly liquidated and cash made available for replacement purposes. With the money invested in construction, the company is also able to restore the depreciation reserve balance as needed by selling bonds to fund construction undertaken with the borrowed money, and with the proceeds, re-imburse the depreciation reserve.

The question then arises for the purpose of such a calculation, as to what is a reasonable interest rate with which the depreciation reserve should be credited and the company charged for the use of this money. If it is regarded strictly as the investment of a fund in the nature of a trust fund, and subject to call, the interest rate is necessarily low. Four per cent is generally regarded as a proper trust-fund rate. If invested in high-grade securities, the interest rate would certainly be greater than four per cent and will ordinarily approach five per cent.

An indication of what is a proper rate in this case is furnished by the relations between the parent company and The Ohio Bell Telephone Company. Even the money ad- [fol. 3558] vanced by the American Telephone and Telegraph Company is not unlike a demand loan. The rate charged by the company for advances to the subsidiary companies is 6 per cent, for which a credit is made for prompt payment of the interest charges. This in prac-

results in a net rate of 5.88 per cent. If we credit the depreciation reserve with interest at the rate of 5.88 per cent,—the same rate which the American Telephone collects on the demand loans which it makes to its subsidiaries —there should be credited to the depreciation reserve a sum resulting from the application of that rate to the average credit balance for the year under consideration. Morse's Exhibit Number 5 shows the credit balance at the beginning and end of 1925 and the average balance for the year shown as the average of those two amounts is $12,277,667.73. The rate of 5.88 per cent on this amount is $721,626.86.

If the rate were computed at five per cent, this amount would be substantially lower and if computed at four per cent it would be very much lower.

I call attention to these three rates, because the decision as to which should be used, if the principle of such a study is accepted is a matter for the Commission to determine, but for purposes of illustration of the effect, I have made the computation on the basis of 5.88 per cent. This illustrates the maximum effect which can be given to this method of adjusting the depreciation reserve by giving it credit for the investment of its funds. Should this accounting principal be adopted the net earnings of the company available for replacement account would be increased by [fol. 3559] the sum of $721,920.00. That necessarily results from the fact that the depreciation requirement would be met to the extent of $721,000.00 by the investment of the reserve balance and to that extent, the burden on operating expenses and cost of the service would be reduced.

Q. Have you an exhibit in which this principle that you have explained is set forth, illustrated?

A. I have.

Mr. McConnaughey: This exhibit is offered in evidence as Hagenah Exhibit Number 6.

And thereupon the exhibit so last above offered is introduced and admitted in evidence on behalf of the State of Ohio and is herewith submitted marked Hagenah Exhibit Number 6 and made a part hereof.

Q. Mr. Hagenah, will you explain this exhibit in detail?

A. My Exhibit Number 6 is based on Hagenah Exhibit Number 1. There appears first the telephone operating

revenues before making any deduction on account of the licensee revenue, paid to the American Telephone and Telegraph Company. This item is taken from the detailed table of earnings and operating expenses appearing on Page 26 of Hagenah Exhibit Number 1. The item appears third from the bottom on the last column on the righthand side.

There is next shown the licensee revenue debtor item which is the amount paid to the American Telephone and Telegraph Company on the basis of its four one half per cent charge. This amount is $1,274,052.29.

Deducting this from the amount collected, there is shown [fol. 3560] by the books as total telephone operating revenue the sum of $29,967,001.19. This is the last item appearing at the bottom of the last column on Page 26 of Hagenah Exhibit Number 1.

There is next shown the five major groups of operating expenses taken from the same exhibit, the total for which appears in the condensed table on Page 18 of Hagenah Exhibit Number 1. The net telephone operating revenues being the difference between the total of telephone operating revenue and the operating expenses is $9,374,947.44.

There are certain deductions which appear in Hagenah Exhibit Number 1 which are properly made, which give the net operating revenue as $6,695,822.49. The derivation of that amount is shown in Hagenah Exhibit Number 1 and the figure that I have just called attention to appears in the condensed table on Page 18.

According to the company's books it is necessary to add to this net revenue the net non-operating revenue which is a proper credit to the net earnings or revenue, making the gross income $7,042,043.07, which item also appears on Page 18 of Hagenah Exhibit 1.

There must next be made a deduction under the company's classification of rents, all rents amounting to $570,562.77, making the net income available for return on the value of the company's property, as per the company's books, $6,471,480.30.

The table, or Exhibit Number 6, from this point forward, shows a number of adjustments which should be made in the company's records, for the purpose of this rate case [fol. 3561] analysis, in order to give effect to the situation which should be recognized on behalf of proper accounting and the various adjustments resulting therefrom.

It is the practice of the company to apply its depreciation rate to the book cost of the property and not to the appraised value. This practice is supported by the major authorities and is the more favorable to the public of the various methods which different companies have used. In view of the reduction in the book cost of the property testified to by the witness Morse, the depreciation rate used by the company should be applied to a lower principal sum than the amount appearing in its balance sheet as the cost of the property. If the rate were applied to this reduced book cost there results a reduction in the depreciation charge of $161,569.00. This credit to operating expenses is on the assumption that each of the adjustments tending to reduce the book cost of the property, are proper.

The next adjustment in the operating expenses is the credit to the net income resulting from the application of an interest rate of 5.88 per cent on the average credit balance of the depreciation reserve invested in operating property on which a return is collected from the telephone subscribers. This amount is $721,326.86. It is the maximum amount which can be obtained by giving effect to the accounting rule under which the depreciation reserve is to be credited or rather any fund is to be credited with the earnings resulting from the investment of its own funds.

Should the Commission find that the rate of 5.88 per cent is unduly high, because of the nature of this investment, [fol. 3562] because it is subject to call and because some compensation is due to the company for the administration of the fund, and use a lower rate of interest, this credit will be correspondingly reduced. The computation is made here for purposes of illustration of its effect.

There is next shown the item of $419,041.29 which will result as a credit to the operating expenses if there is charged to construction that part of the payment made to the American Telephone and Telegraph Company which is related to engineering, accounting, legal and financial assistance on account of construction work.

Under the Federal Tax Laws, the company pays a tax on its net income. If these three adjustments to which I have called attention were given effect on the books of the company—and that would follow if consideration is given to them in this rate case—the net earnings of the company subject to Federal Tax would be increased by the sum of the three items mentioned. This would result in an increased

tax against the company under the present income tax law of 13½ per cent on such available balance. The tax in question would thereby be increased $175,842.52, which operates as an increase in operating expenses.

The net earnings after adjustment in the manner indicated for each of the items referred to would have increased to $7,598,175.01. This is the amount available for return on the fair value of the property as ascertained by me and reflects the maximum effect which can be given to any of the matters which I have discussed and analyzed and [fol. 3563] covered in my direct testimony.

Q. Have you given any consideration to what disposition should be made of the expense of this rate case in connection with the return of the company for its earnings?

A. I have.

Q. Please state what you have to say with reference to that?

A. In examining the operating expenses of the company over the last four years, it appeared that large expenditures had been made each year on account of this appraisal and rate case now pending before the Ohio Public Utilities Commission. These expenditures are reflected in certain subaccounts under the title of "General and miscellaneous accounts." If these expenditures were abnormal it would be necessary to deduct them from the operating expenses for the years in which the charges were made in order that the true cost of operating the telephone business might be developed. Expenditures on behalf of appraisals and rate investigations are proper charges against the service, but should not all be charged in one or two years. It is the customary practice to amortize expenditures of this character over a period of time—three to five years. In this instance, because of the magnitude of the case and the length of time in which the various aspects of the case have been pending, probably a five year period would be the more nearly correct one to assume. The charges which have been made on account of the appraisals and related financial studies by the company were in 1922, $35,046.80; in 1923, they were $83,063.24; in 1924, they were $104,170.26. In 1925, they were $96,836.72.

[fol. 3564] We made no examination of the books of the company for the calendar year, 1926. The expenses of all the proceedings before this Commission in 1926, together with the supporting studies made by the company were

appear in the 1926 amount. It is possible that the books of the company over the five year period ending with 1926 will show an expenditure on account of this case of over $400,000.00.

Analyzing the details, it would seem, however, that the charges had been made with more or less regularity over the entire period, so that in effect, there is now taking place an amortization of these costs on the basis of a five year period, and were the exact average distributed over the five year period in lieu of the charges as they now appear on the books of the company, the change in the total would be negligible.

I call attention to the fact to show that the account and its effect of such charges has not been overlooked and for practical purposes, there is a self-amortization of these charges taking place, and no change in the operating expenses need be made for that reason.

Q. Will you take up and discuss the question of a proper rate of return for this company?

A. I have made a study of the cost of money to The Ohio Bell Telephone Company, and the various factors which are present in determining what constitutes a reasonable rate of return. I have analyzed the testimony and the supporting exhibits filed by Mr. Crunden of the American Telephone and Telegraph Company, testifying in this case on behalf of The Ohio Bell Telephone Company. I have [fol. 3565] also reviewed the testimony of the bankers and brokers who further testified on behalf of the company, all in support of eight per cent as the measure of a reasonable return. I have reduced the results of my study to an exhibit.

And thereupon a paper writing is produced and is for the purposes of identification marked Hagenah Exhibit Number 7.

Q. I will call your attention to a document which is entitled "The Ohio Bell Telephone Company, the measure of a fair return. Before the Public Utilities Commission of Ohio, Columbus, Ohio, 1926." And ask you if that is the exhibit to which you have just referred?

A. Yes, sir.

Mr. McConnaughey: We offer this in evidence as Hagenah Exhibit Number 7.

And thereupon the document so last above offered is introduced and admitted in evidence on behalf of the State

of Ohio and is herewith submitted marked Hagenah Exhibit Number 7 and made a part hereof.

Q. Will you discuss that exhibit as you think it necessary, Mr. Hagenah?

A. Because of the importance of the subject, I have gone into a study of the cost of money at some length, both as to the general principles pertaining to an analysis of this character and the materiality and value of the exhibit offered by Mr. Crunden in support of what constitutes a reasonable return. The principal sum involved here—substan- [fol. 3566]. tially in excess of one hundred million dollars—is so large that a variation of a single per cent in the rate of return will tend to increase or reduce the burden on the telephone users by over one million dollars a year.

Hagenah Exhibit Number 7 consists of 49 pages of general financial discussion and analysis of Mr. Crunden's testimony with special reference to the credit position of the Ohio Bell Telephone Company and similar conditions present in other corporations where the money market is giving effect to financing and gives a basis for determining what is a reasonable rate of return for this company.

On the first page of the exhibit, I state in general the definition of what constitutes a reasonable return for a public utility:

"A measure of a reasonable return for a public utility at a given time is a return which will attract to the company the necessary capital to enable it to meet the demands for serving the public."

It is not an arbitrary percentage nor is it determined by opinion alone. The money markets in which financing of corporations must be carried out, give us all the factors which are material in determining what is a reasonable rate of return and indicate to us quite definitely what the reasonable return is.

I show on Page 2 the three principal factors which govern the measure of return for any particular corporation. They are the credit position of the borrower, the condition of the money market at the time of the contemplated financing, [fol. 3567] and thirdly, the character of the financing which the utility seeks to undertake.

I will refer briefly to the effect of each of these three factors. The most important is the credit position of the borrowers. There have rarely been instances in the history

of the United States, even in periods of panic or war-disturbance when corporations of the highest credit standing have not been able to meet their financial requirements. They may not have been met in the most satisfactory way at the time, but there were no conditions which would throw the properties into receivership if their credit standing had been good.

The investment worth of a security varies inversely with the hazards to which it is subjected. Aside from public financing the investment market has regarded for a number of years that, in normal times, the first position for general attractiveness must be accorded to public-service corporation issues. Such a corporation is a very popular borrower and its securities appeal to the public.

It is in a rather unusual position. It is a public utility, recognized by the statutes of the State. It is engaged in a service which is monopolistic in character and in the exercise of which it is protected by the public, subject to public regulation. It- service is a necessity and it is subject less to fluctuations, to periods of depression and extreme activity, than other classes of securities.

For this reason, they have an unusual appeal and that factor should be recognized in determining what is a rea- [fol. 3568] sonable rate of return.

In determining the attractiveness of a particular investment, we must give effect to the measure of security the skill of the management, the stability of the earning- and the existence of public utility laws and regulations which have so unmista-bly tended to improve the credit position of public utilities and made it possible for them to borrow more cheaply than other classes of utilities, as will become apparent from the tables contained in this exhibit.

The second important factor which must govern the study of this character is the condition of the money market referred to. Obviously if this investigation were being conducted at a time of financial stringency or of public distrust in securities of this character, the cost of money would be higher. Money is a commodity much like cotton, wheat or coal, and when the demand for it is great, there is bidding for the funds which makes it possible for the borrowing corporation to secure attractive terms. If the public at this time did not have faith in public utilities securities and if the law were not so well established regarding their protection, interest rates would be higher.

At the present time, we have an unusually favorable money market for financing. Interest rates are low and are tending lower for securities of this character. We shall give effect in determining the measure of return for this corporation to the conditions which now obtain.

Five years ago, when a less favorable condition existed, utility commissions might generally find that the rate of [fol. 3569] return probably was not less than eight per cent, and many utilities were permitted to earn in excess of nine per cent. At that time the cost of money to strong utilities was frequently in excess of eight per cent and the rate allowed had to be at least that high as the cost of money, to enable that money to be acquired.

By the same factors which govern the financing five years ago and determined the action of commissions then it is now advisable to fix a lower rate of return without disturbing the margin of profit or for the administration of the business, between the cost of the money borrowed on different forms of securities and the full measure of return allowed on the value of the property.

I show in Exhibit 7 a somewhat extended discussion of the various factors which have operated to improve the financial conditions and make available increasing funds for investment out of which lower interest rates have developed. The results of these conditions are shown on Page 7, where it appears that the cost of money to all classes of public utilities, except street railways—where unusual conditions obtain—has been steadily downward. I show the results in terms of averages at three months intervals. The information can be supplied monthly if desired, although the results are not changed.

The cost of money for electric light and power company bond financing was 6.72 per cent in 1920. It has declined consistently until for the first seven months of 1926, it was 4.85 per cent. For gas utility bonds, the corresponding [fol. 3570] reduction has been from 6.98 per cent to 4.93 per cent. For Telephone and Telegraph bonds, the reduction has been from 6.51 per cent to 4.78 per cent. I mention here and will mention throughout the discussion of this subject, the cost of money for other utilities, railroads, and industries, because these corporations are all bidding with the corporation here under consideration for the surplus funds in the investment market. There is competition

for money just as there is competition for supplies, manufactured products and service.

On Page 8 of this exhibit, I show what has taken place in the attractiveness of the bonds and the public desire to possess them.

The average price of bonds in December, 1926, is compared with the low cost of the identical bonds in 1920 and again the price obtaining in July, 1926.

Electric Light and Power bonds have increased in the average in value from 76.68 per cent in 1920 to over 102, in 1925 and to 104.58 per cent in July, 1926. Gas bonds have shown a corresponding increase slightly greater in percentage; and telephone bonds show a like improvement.

There is shown on Page 9 the table setting forth the distribution of the new long term public utility bond and note issues by years from 1920 to 1925, with the amount of the issues and grouped according to the yield at which these securities have been placed with investors.

Without going into detail, I call attention to a recent tendency which is evident on the face of the table, from the [fol. 3571] mass financing year by year, until the high point is reached at 1925 and although it does not appear in this table, this condition of betterment has been carried through 1926. The effect of this improved financial condition and feeling of good will towards public utilities because of the regulatory machinery and the decision of the courts giving effect to those practic-s is shown in the table on Page 11. With this is shown a comparison by years from 1921 up to and including the first seven months in 1926 on long term financing, the sale of stocks, and of all securities including short-term financing of railroads, public utilities, industries, and total financing. The table shows that public utilities all during this period, grown into the most attractive class of investments, and have grown more rapidly in their appeal for capital than any other class. The position of the utilities under regulation, compared with the position of the railroads, is significant and outstanding.

At the top of Page 13 there is a condensed table showing what the increased percentage of the surplus investment funds of the United States is each year going into public utilities.

A third general factor to which I called attention was the character of the financing. Mr. Crunden confined his testi-

mony to a single class of securities, using it in a general sense—that is interest-bearing securities.

Obviously the interest rate on interest-bearing securities without giving consideration to the cost of capital for other [fol. 3572] forms of financing than by bonds and notes, does not answer the question. Also the statement of what a large number of other corporations have paid for capital raised on all forms of securities of an interest-bearing nature—that is first mortgage bonds, general mortgage bonds, junior bonds of various character, debentures, trust equipment certificates and conversible bonds,—is no indication of what is a fair rate of return for the Ohio Bell Telephone Company under the conditions which obtain here which are in only a few instances approached by the utilities contained in the list which he submitted and from which he drew his conclusion.

On Page 16, I begin the analysis of Mr. Crunden's Exhibit. He submits a list of 291 Public Utility Bond and note issues offered publicly for sale in the United States between January 1, 1925, and February 28th, 1926. In his exhibit there is shown the name of the company, in each instance, the character of security, the amount involved, the interest rate appearing on the face of the security and the offering price to the public, with the yield; the par value of these bonds *id* $1,409,879,000.00. A careful analysis of this exhibit shows that it does not contain the material from which the approximate present cost of capital to The Ohio Bell Telephone Company can be computed. What constitutes a reasonable return for this company is not indicated by the cost of capital of a large number of corporations issuing securities of a wholly different character and under conditions different from those which apply at this time to the [fol. 3573] company under investigation.

Contained in Mr. Crunden's list, there are 22 issues representing $171,000,000.00 of capital, or over 12 per cent of his total, which are wholly un-related to the subject before this Commission. Practically all of these securities are of public utilities in Germany, with a few large public utilities located in Japan and Italy where, because of economic conditions, inflation of currency, foreign laws, war indebtedness, industrial disturbances, interruption with foreign commerce and competition obtains, it makes the cost of capital invited from the United States, extraordinarily high.

Analyzing further his exhibit, he includes two equipment

trust certificates which have no connection to the cost of money to a telephone company under regulation. He submits the cost of borrowing money in one convertible option warrant, one bridge bond, three serial bonds and he gives the cost in financing in 25 instances where there is no public record of the securities to the extent that quotations are available for the leading banks of the United States. These transactions have been made in private, at least no rating for market is obtainable.

On Page 18 I list the various securities which have no interest and can have no effect on the determination of the cost of money to The Ohio Bell Telephone Company. You will note the names of the German, Italian and Japanese Utilities that have found it necessary to borrow in the United States and the coupon rate on these bonds. There is [fol. 3574] nothing like that condition or approaching it in connection with the financing of a well-established public utility in the United States, and there has been no such condition for the entire period subsequent to the deflation in 1921 and 1922.

On Page 19, I give a list of the Public Utility issues contained in Mr. Cruden's Exhibit for which no financial rating for guidance is obtainable. Those familiar with public utility issues will at once recognize the securities of a considerable number of new and untried holding companies who have not yet consolidated their position and whose financing must necessarily reflect the unstable conditions of a new industry. Note there the large number of instances where this financing consists in the sale of bonds secured by the deposit of stock as collateral. They are not first mortgage bonds or general mortgage bonds.

On Page 21, I recorded the securities of the highest class, according to the investment rating which is assigned to securities by investment authorities. The rating which I have used for the purposes of this case is that determined in John Moody, whose service is subscribed to by practically every bond, trust company, life insurance company and estate in the United States and in many of the European countries.

It appears that in his list he included only nine issues that were of the highest grade of utility bonds. It will appear further from my exhibit that the bonds which the Ohio Bell Telephone Company has issued are of the highest and most attractive investment rating that is obtainable

anywhere in the United States. But in his list of nearly [fol. 3575] three hundred issues, Mr. Crunden included only nine bonds of the rating which the investment market has accorded to the bonds of the Ohio Bell Telephone Company. There are only 19 bonds of the next lowest grade; 67 bonds of the third grade; 94 of the fourth grade and 48 of the fifth grade. All of these bonds except of the first grade which are cited in his list are of a credit rating and investment attractiveness far below that of the bonds which The Ohio Bell Telephone Company has sold.

On Page 23, I submit an analysis of the bonds which are more or less related, by character and aims to those which the Ohio Bell Telephone Company would issue under a refinancing on a proper capital structure at the present time. They are divided into four groups: Those maturing in less than five years; those maturing in from five to ten years; those issues maturing in ten years and over, but less than twenty years and issues maturing in 20 years or over.

They are further divided according to their nature as to the issuing company, that is whether they are the bonds of a holding company or of a subsidiary operating company and secondly, they are subdivided according to the character of the company, that is as between independent light and power companies, telephone companies, joint utilities, etcaetera. Note the significance of the maturity date of bonds. Financing for a short time has cost more; as the length of maturity increases, the interest rate or cost of the money decreases.

We have a right to assume that The Ohio Bell Telephone [fol. 3576] Company were its present requirements to be financed under the skillful guidance of the American Telephone and Telegraph Company would issue securities attractive as to form and for a maturity date that would give the company, and indirectly the public the benefit of favorable market conditions.

I also call attention to the fact that in financing by untried holding companies as compared with old-established operating companies, it is hardly fair to determine the cost of capital to an old-established operating company from what it costs untried holding companies seeking to seel either short-term bonds or collaterally secured bonds.

Q. In connection with that table, may I ask you, Mr. Hagenah, to state what is indicated under the head of "Number" in the first column opposite?

A. The column headed "Number" states the number of issues of the class covered by the general heading, as to the length of maturity.

Q. That is the number of issues listed by——

A. By Mr. Crunden.

Q. By Mr. Crunden?

A. Yes. The next column shows the amount of money involved in these issues. I call attention to the item of the heading showing that the last three cyphers have been dropped, for example, the item appearing in the first group and on the first line as "24,177" is subject to that note really, $24,170,000.00.

The third column shows the per cent. of the total issues.

The fourth column shows the weighted yield. Thus, of these issues analyzed in this table, 7 per cent. represented issues maturing in less than five years, or what is commonly [fol. 3577] known as short-term financing. 2.7 per cent. matured in from five to ten years. Ten per cent. matured in from ten to twenty years and 79.6 per cent. matured in 20 years or more.

To show that Mr. Crunden's Exhibit is not a fair statement of the cost as involves the Ohio Bell Telephone Company, I call attention to the character of issues which he has included in his exhibit from which he drew his conclusion. They range all the way from high grade first mortgage bonds to debentures, collateral trust bonds, equipment bonds, serial notes, etcaetera. When the inquiry as to the cost of money and what constitutes a reasonable return at this time is confined to issues which by nature and amounts involved and character of the borrowing company most nearly approach the characteristics and surrounding present financing of The Ohio Bell Telephone Company, an entirely different situation is disclosed.

Such a tabulation appears on Page 27. Note here that in 1925, when $176,975,000.00 of financing of this character was completed, there is not one single issue with a rating of less than A. I define in the exhibit what an A rating is, as well as a double A and a triple A rating. The weighted average yield of this financing was 5.38 per cent. The weighted average yield in 1926 for similar issues was 5.14 per cent. Had Mr. Crunden confined his studies to issues of this character, there would have been no such result to [illegible] conclusion of an eight per cent. return.

Q. Mr. Hagenah, may I ask you where the list of securities
[fol. 3578] on that page 27 is taken from. I don't believe the exhibit states that.

A. This is taken from the market record of utility financing in 1925 and '26 compiled by me. It is confined to instances of financing wherein the factors are comparable with those of The Ohio Bell Telephone.

On Page 29 I show what has taken place in the financing of requirements by the subsidiary companies of the American Telephone and Telegraph Company. Note that there is only one instance of such financing which has received an A rating and that is by the Pacific Telephone and Telegraph Company in 1922. In later years, the highest possible market rating has been assigned to such securities.

The interest rate averaged for 1922, ranging from 5.15 to 5.4 per cent. In 1923 it ranged from 5.1 to 5.63 and one issue put out in 1926 was at 5.45. In 1926, it ranged from 5. per cent. to 5.32 and in 1926, the only instance in which A. T. & T. financed any subsidiaries was 4.80 per cent.

I have referred to the position of The Ohio Bell Telephone Company as contrasted with the unfavorable position of many of the corporations included in the list submitted by Mr. Crunden. The Ohio Bell Telephone Company is entitled to the benefit of the financial strength of the American Telephone and Telegraph Company under the contract known as the four one half per cent., for which service it collects from The Ohio Bell Telephone Company and the amount of which payment is not disturbed in any of my exhibits.

On page 31, I quote from a report by Mr. Houston, Presi-
[fol. 3579] dent of The Bell Telephone Securities Company of New York, covering an address delivered by him before the Investment Bankers Association of America at its 12th Annual Convention in 1923. Without reading this extract, I call attention to the fact that the President of this subsidiary company or interested and allied company states that the Associate Companies in 1922, earned 5.6 per cent. on the book cost of their plant. They would have had to earn only 4.7 per cent. to make it possible for the American Telephone Company to pay its 9 per cent. dividend and in that year the American Telephone Company earned 11.[illegible] per cent., which was greater than the average earnings [illegible] ten years, and its earnings are now satisfactory on its [illegible] creased capital.

This financial strength is due not only to the earnings of the subsidiary companies, but also because of the funds collected under the four one half per cent. contract, which, by the way, has recently been changed to a four per cent. charge, and were the application of that contract tested in 1926, effect should have to be given to that change in the contract.

The position of the American Telephone & Telegraph Company and the popular appeal of its securities is further shown in the table on Page 32, comparing the results in 1925 with those shown for 1922, to which Mr. Houston has reference when he explained the company's strong investment position. There has been an increase in the revenue of the American Telephone and Telegraph Company from dividends of subsidiaries of over 67 per cent., of interest [fol. 3580] 48 per cent., and telephone operating revenues 32 per cent. The operating expenses have increased 25 per cent. The surplus after charges has increased 62 per cent. The final surplus has increased 148 per cent. and the ratio of net earnings to fixed charges has increased from 5.2 to 1 in 1922 to ratio of 6. to 1 in 1925.

I call attention to the great strength of the American Telephone & Telegraph Company and the great results accomplished by its financing department because the credit of all the Bell subsidiaries is largely influenced and determined by the great strength of the parent company. This is present and recognized by every purchaser of Bell Telephone subsidiaries securities, everywhere.

On Page 33, I call attention to the more recent instances of large financing by Bell Telephone Company subsidiaries, covering $175,000,000.00 bond issue. The cost of this money has ranged from 5.3 per cent. for financing by the Illinois Bell Telephone Company which now has a rate case in the Federal Court, and therefore is subject to some uncertainties, to 4.8 per cent. of the New England Telephone & Telegraph Company which has recently received an increase in rates. All four issues are given the highest possible rating of the investment market.

The average cost of this capital was 5.06 per cent. Of course that is not the true cost of capital to the borrowing company. Provision must be made for the amortization of discounts, commissions to bankers, sales' expenses and other costs incidental to the sale of such securities. These Mr. Cranston says, range from .25 of one per cent. to .33 per cent,

[fol. 3581] which cost I have verified and find to be correct.

Adding this cost as an overhead expense of financing, the average cost of subsidiary Bell Telephone Company financing during that period of time which reflects present financial conditions is 5.35 per cent.

At the top of page 34 I show the classification of all the bonds and note issues of the large subsidiary companies of the American Telephone & Telegraph Company according to Moody's rating. There are only 4 of the Bell; those of the Pacific Telephone & Telegraph Company which received the third class rating. 18 received the second class rating and 32 received the highest rating which the market gives. This covers 54 different telephone bond and note issues.

From all of this material, I am able to determine what constitutes a proper rate of return for the Ohio Bell Telephone Company at this time in terms of such a capital structure as the public has a right to expect from the Ohio Bell Telephone Company as a subsidiary of the American Telephone and Telegraph Company and for the financial existence of which company the subscribers in Ohio are being charged under the inter-company contract.

The cost of money on bonds is only one part of the cost of financing. Provision must be made for financing with preferred stock for a part of the capital needs and to cover the needs of the common stock and also to provide for some surplus. Obviously no company can spend all of its net income for interest and dividends and long maintain its investment attractiveness. As to what constitutes a capital structure, I am not offering my own judgment, but am [fol. 3582] offering the results and experience of the leading corporations of the United States which are bidding in competition with the telephone industry for investment funds. I show on pages 35 and 36 what the largest railroads, gas companies, electric companies and joint gas and electric companies have found to be the best balanced capital structure to meet their needs for economical financing. I have taken 15 corporations of each class. The number could be enlarged. They are not hand-picked. For the railroads, I cover an outstanding bonded indebtedness of over five billion dollars; four hundred twenty-one million dollars of preferred stock and over two billion eight hundred twenty-six million dollars of common stock. The weighted average percentage of bonds in the railroad capital struc-

ture is 60.9 per cent.; capital stock, preferred 5.1 per cent. and common stock 34 per cent. The average capital structure of the 15 leading gas companies or comparable large gas companies is 57 per cent. for bonds, 7.4 per cent. for preferred stock and 35.6 per cent. for common stock. For the electric companies, the average bond proportion is 51.6 per cent; the preferred stock 10.5 per cent. and common stock 37.9 per cent. For joint gas and electric companies, the bond proportion is 57.8 per cent. the preferred stock 18.4 and the common stock 23.7. For all the public utilities in this table alone and exclusive of railroads, the bond proportion is 54.8 per cent., preferred stock 13.2 per cent., and common stock 32 per cent. If we include the railroads in a grand total, the proportion of bond money is 59.4 per cent. [fol. 3583] Preferred stock 7 per cent., and common stock 33.6 per cent.

I show in a small table on the bottom of page 37, the investment rating which the market has given to these bonds. I call attention to this fact so that judgment may not be reached, that because of the relative large amount of bonds, the market has given a low rating, to such bond issues and to the junior securities. This table shows that out of the 465 instances of bond and note issues of the corporations listed, 257 received the highest investment rating *with* the market affords. 118 received the double A rating and only one received the BA rating and that company, with which I am familiar, was, at the time of its financing, in considerable distress, as a result of a long-drawn out I. W. W. strike in the northwest. It is included here because it is a large company, but this bond issue at that time was affected by that fact in the company's recent history; that the preferred stocks and common stocks of these corporations have not suffered in their attractiveness to investors because of the amount of bonds ahead of them is shown on Pages 41 and 42. I call attention to the frequency with which the rating of triple A and double A appears. Mr. Crunden expresses the opinion that not more than 35 per cent. of the total capital structure should be provided for by bonds. The effect of this of course is to increase the cost of money to the borrowing company. That results from the fact that a strong company which is able to borrow money cheaply because of its position would, through the issuance of first

mortgage bonds, be able to obtain a larger per centage of its total capital requirements than the low first mortgage [fol. 3584] rate. If bonds are not availed of in this condition it is necessary to issue more preferred stock which carries a much higher dividend rate, and a common stock with probably a still larger dividend rate, to make that attractive. In other words, unless a strong utility raises a reasonable and proper amount of its total capital through the issuance of first mortgage bonds, the total cost of capital to that company is increased.

The table on Page 44 shows that the Bell Telephone Company has not taken advantage in its financing of the full possibilities of its favorable credit position. I show on that table the outstanding bonds and the advances by the parent company, the amount of preferred stock and the common stock reduced to terms in percentages of the total. Thus, for over 20 strong Bell Telephone Company subsidiaries, the bond proportion of the total capital is 26.9 per cent.; the advances to the operating companies approximately 12.2 per cent.; the preferred stock represents 8.5 per cent, and the common stock 52.4 per cent. If we treat the advances to the operating companies as in the nature of a long-term indebtedness and not unlike bonds in character, the total amount of interest-bearing indebtedness becomes slightly over 39 per cent. of the total.

This is apparently the source from which Mr. Crunden arrived at his testimony of 35 per cent. and tends to support that estimate if the practice of the American Telephone & Telegraph Company is to be the sole and governing factor. I showed that the preferred stocks and common stocks of the railroads and utilities which had issued as [fol. 3585] much as 55 or 60 per cent. of their total capital in the form of bonds did not suffer in market attractiveness because of that fact.

I now show on Page 45, that the preferred stock and the common stock of The Bell Telephone Company's subsidiaries has received no better rating in the investment market because of the fact that these companies have raised no more than 35 to 39 per cent., of their total capital requirements, by the issuance of bonds.

On Page 46, I show the effect on the total cost of capital to a utility by change in its capital structure. If we assume the identical corporation and put up its capital structure

according to the first column, the cost of its capital would be 6.67 per cent. This is fairly similar to the capital structure of the telephone utilities, under the American Telephone & Telegraph supervision. The rate for bonds is somewhat less. I have divided that equally, one-third to each class. If, however, these companies have adopted the capital structure like that of the average railroad or public utility contained in the list described, the same company's cost of capital would be reduced to 6.12 per cent. In setting up the capital structure which the Ohio Bell Telephone Company should use as determining what constitutes the true cost of capital to it for all basis of financing, I assume the average of 55 per cent. as indicated by the experience of other utilities and state that this amount should be raised through the sale of bonds, and I apply to that money the average market rate of 5.35 indicated by the average mar- [fol. 3586] ket rate of 5.35 indicated by the recent financing of the large subsidiaries of the American Bell Telephone Company, including the cost of commissions, the discounts, sales' expense, etcetera. The Ohio Bell Telephone Company has issued a certain amount of preferred stock on which the market conditions make it advisable to pay seven per cent. I assume for the purpose of my analysis that after 55 per cent. of the capital requirements are provided through the sale of bonds, the preferred stock and common stock may properly be evenly divided and on the preferred stock a dividend of seven per cent. will probably have to be paid. The common stock, because of the bonds and preferred stock placed ahead of it, both as to claim on physical assets and earnings, is entitled to a return at the present time of not less than eight per cent. Eight per cent. may be taken as a fair dividend rate on telephone stocks. The basis of that is on the popular appeal of stocks of this character to security buyers.

In justice to these charges, the company should make a provision for surplus. The best evidence of what is deemed a proper surplus in the telephone industry is the amount of surplus which the American Telephone & Telegraph Company permits or recommends that its subsidiary companies should retain.

I show on Page 48 of this exhibit a statement of the net earnings of the leading Bell Telephone subsidiary corporations and the amounts which they pay out of such net earn-

ings for interest, dividends, other disposition of income, and surplus. It will be noted that the surplus provision [fol. 3587] computed as a weighted average for these companies is equal to 10.82 per cent. of the expenditures for interest, dividends and other disposition. I think it proper, therefore, to allow a surplus provision equal to 11 per cent. of the direst interest and dividend requriements.

On Page 49, I show a final computation in which effect is given to the subdivision of the capital structure, to 55 per cent. in bonds at the rate of 5.35 per cent; 22½ per cent. of the capital raised by preferred stock calling for a 7 per cent. dividend and 22.5 per cent. of the capital to be raised by common stock carrying an eight per cent. dividend and the same surplus over and above interest and dividend payments, shown by the weighted average experience of the important Bell Telephone subsidiaries.

This indicates that the necessary fund to carry this capital structure and its requirements is equal to in round figures 7 per cent. on that amount found to be the fair value of the property, by the proper authorities.

Mr. McConnaughey: If the Commission please, this concludes Mr. Hagenah's testimony and is all of the evidence that he is prepared to submit and completes his submission of the result of his investigation; and we have no further evidence to offer at this time.

In reference to the arrangement to have further hearings of the matter, the latter part of February, or the middle of February, we would like to say this, that Mr. Hagenah considers it desirable—and we do—to bring this information down so as to include the result of operations for 1926, when the year is concluded, together with the [fol. 3588] additions of property during that year, and it just possible that there may be some matters of detail to submit further that might occur to us in the meantime.

We would like to have the record left open, as it has been heretofore, during intervals in the hearings, for that purpose, and beyond that, we haven't anything further to submit at this time.

Commissioner Poor: Do you desire to ask any questions of Mr. Hagenah at this time?

Mr. Burr: Not of Mr. Hagenah at this time, but we would like to ask Mr. Dorsey a few questions in order to expedite our preparation for the cross-examination.

[fol. 3589] And also VICTOR A. DORSEY, resuming the stand, continued his testimony as follows:

Cross-examination.

By Mr. Burr:

Q. Mr. Dorsey, in your direct examination, you referred several times to what you termed mass production. Will you please tell the Commission what is meant by that term?

A. By mass production, I mean the organization of gangs and storeroom facilities to carry on the reproduction or the building of the entire property of The Ohio Bell Telephone Company from one season to another. That is continuous construction in large volume.

Q. What is the construction period which you have in mind in giving that answer?

A. I should feel that the entire property could be built over a period of five years.

Q. In using five years, do you mean that it would take five years for construction of the property only or would part of that period be used for construction and part for what is known as development?

A. Well, part of the property naturally would be completed and in operation before the five year period. What I estimate is that the entire construction program would be completed during the five years, of the physical property.

Q. Returning to the matter of mass production, how large in your judgment should a job be either in dollars or [fol. 3590] in quantity in order to represent mass production for each account?

A. That would be a rather difficult question to answer offhanded but what I would say is that if you started in the Spring of the year, when the frost is out of the ground to construct pole lines, that you would build continuously as fast as the material could be delivered until late in the Fall, until weather conditions would make it impossible to go on further or would cause uneconomical construction. That would be also true of your underground plant.

Q. What would you do with your organization in the wintertime?

A. Undoubtedly, you would have to cut down your organization; you would not carry the entire organization

that you would during the summer months, when you would carry on the greater part of the construction.

Q. Comparison has been made between Mr. Williams' methods and that applied by you, particularly in respect of the claim advanced that Mr. Williams' unit costs were computed on the basis of piece meal construction while yours were computed on the basis of mass construction. Now, how large in your judgment would a job have to be either in dollars or in quantity to represent mass production as against what you have termed piece meal construction used by Mr. Williams?

A. The only way I could answer your question would be by comparison. I believe that construction of one or 50 or 25 poles,—taking pole line plant as an example—is not mass production as the detail costs or the cost of performing such work was contained in the analysis upon which [fol. 3591] Mr. Williams and Mr. Sloan base their estimates do not represent mass construction. It was piece meal construction.

Q. You say the erection of one pole or 25 poles would not constitute mass production? What in your judgment would constitute mass production in the matter of pole construction?

A. In my judgment, mass production or construction would mean the continuous operation of the gang in the field from the early Spring months until late Fall. I could not tell you as to the actual amount in dollars that would involve, but it would be continuous construction day in and day out.

Q. Have you given in your unit costs for poles for example, any consideration to the cost for actual pole construction or erection experience of The Ohio Bell Company?

A. I have only to this extent, by checking my completed unit in place against the larger specific estimates that were submitted by the company for our examination.

Q. How large were those jobs against which you checked your unit costs?

A. They involved the construction work ranging from 500 to 1000 poles.

Q. Well, will you give us the numbers of the estimates which you took into consideration in that connection if you please?

A. I have a table here showing the estimates or the total dollars involved which was taken off the specific estimates furnished by the company, as compared with the same quantities contained in those estimates and priced out on the units contained in Hagenah Exhibit Number 2, and I find that the difference of the percentage relation of material to labor as found by applying the unit costs contained [fol. 3592] in Hagenah Exhibit 2 to be 43.11 per cent. while the ratio of the material to the labor as contained in the completion reports of specific estimates was 46.73, a difference of 3.62 points between our ratio of labor to material as compared with the company's actual performance.

Q. For what account was that?

A. That includes account 1-C, 2-C, 13-C, 15-C, 25-C, 1-T-C, 13-T-C, 15-T-C, and 25-T-C—was all property in the outside plant except underground conduit.

Q. Is the percentage to which you referred a composite percentage?

A. Yes, sir, weighted.

Q. Have you the percentages by accounts which were used to make up that composite percentage?

A. No, sir, I have taken the whole.

Q. Will you go back to my previous question and tell me if you please the estimate numbers which you used in making your check, that is to say, the check between your unit costs and the costs as shown by the estimate or reports of the company?

A. I could make that answer a little shorter, Mr. Burr, by stating that it contains all the specific estimates and does not take into consideration any of the routine estimates of the company. I can read them in if you wish. I have them all here and we checked the list when Mr. Williams and Mr. Sloan read them in and they were the same as to all they used.

Q. In making comparison referred to, did you make use of all of these specific estimates?

A. Offhanded, I think we did, possibly one or two that [fol. 3593] were not considered, I think of one, of one estimate, or one or two others, but I could furnish you a complete list of them that we used.

Q. When you found out that your percentage of material to labor was 43 per cent, and that that shown by the estimate completion reports of the company was 46.73 per

cent., what adjustment if any did you make in your figures?

A. I didn't make any adjustment as the report was completed then and the unit costs were also complete.

Q. You simply concluded that you were not accurate and so you would use your figure?

A. No, sir, I concluded it was a very close estimate, as close as one engineer or any number of engineers could estimate for any specific job.

Q. Was that percentage one of labor to material or material to labor?

A. That percentage is the ratio of labor to material.

Q. Did you use the current figure for material or current prices for material?

A. The prices in the appraisal report or Exhibit Number 2 are virtually the same as those used by Mr. Williams in his estimate of reproduction cost, in the case we were guided by the same price list and it was one that was furnished by the Western Electric Company.

Q. Well, were the prices used in making this comparison that you speak of taken from the appraisal in both instances?

A. No, the prices for making the comparison off of the specific estimates were those that were contained on the specific estimate sheets.

Q. In the preparation of the unit costs, which you used, [fol. 3594] did you begin your compilation or computation with tentative costs?

A. No, sir, the unit costs as compiled were based upon the gang performance; and the material prices were applied to the quantities, that is, for the different materials. There were no tentative unit costs. That is, the original computation is the one I have here in the book in detail.

Q. How did you go about the compiling of those unit costs; what was your starting point, if you please?

A. The starting point in the material prices as I have stated was the quoted prices. The starting point for the labor is based upon the scale of wages paid by the Ohio Bell Telephone Company as of June 30, 1925 and the gangs for each class of work or performance were set up. These gangs were checked against reports that were prepared in connection with telephone properties in Ohio previously and brought down to date and also checked against other properties.

Q. Were the gangs whose experience is used exactly the same as and constituted in exactly the same way as the gangs used by the Ohio Bell Telephone Company in its construction work as of June 30, 1925?

A. I could not answer that question. I could look into my records and verify it to see.

Q. We would like to have that if you please. Now, what is the source from the beginning if you please, of your gang records with respect to their performance, that is to say, with respect to the time that it takes a gang to do a given piece of work, be it the erection of a pole or something else? I am trying to get at your starting point, if you please?

[fol. 3595] A. My starting point in connection with this work has been the experience over about seventeen years and also checked against the completed cost of erecting different sizes of poles in different streets of the country.

Q. That is——

A. I might further add that I made a study in 1913, I think it was, in connection with the Cleveland Telephone Company appraisal, in detail, as to gang performance. Also another study of the Michigan State Telephone Company, of the gang performance and studies in the Chicago district for the Illinois Bell Telephone Company.

Q. Well, now, with respect to Ohio, your unit cost experience started in 1913 in the case of the Cleveland Telephone Company, did it not?

A. No, sir, it started previous to that, in the case of the Cleveland Electric Illuminating Company.

Q. In the case of the Cleveland Electric Illuminating Company; very well, what year was that?

A. That was in 1911 I believe.

Mr. Hagenah: '11 and '12.

The Witness: '11 and '12.

Q. In 1911 and '12. Now, taking from that date down to the experience with the Cleveland Telephone Company, when did you next have occasion to observe the performance of gangs in Ohio?

A. In 1926, the present work.

Q. In 1926; so that your performance of what we would call field conditions and the results of construction gangs in the field insofar as telephone construction is concerned, be-

gan with the year 1913 and then there is a hiatus from [fol. 3596] then until 1925 or '26?

A. That is if you refer specifically to the State of Ohio; otherwise no.

Q. I am, yes.

A. (No response.)

Q. What was the observation which you made in 1925 or 1926?

A. In reference to what?

Q. In reference to the performance records of construction gangs of telephone linemen?

A. Why, the performance records in this case was the discussion with the engineers in charge as to the number of men in their gangs. I did not check in the field their performance of these crews.

Q. What application did you make of the information which you received from your conversation with construction foremen or members of these gangs in 1925 or '6?

A. The only application of the discussion was to see that they were included—the number of men and the proper class of men for construction purposes of this nature.

Q. Well, did you inquire of them how long it took a gang of a given size to erect a given number of poles?

A. Yes, sir.

Q. Do you know the names of the men of whom you inquired?

A. No, sir, I do not.

Q. Where were they?

A. This information was gathered by Mr. Dishinger when he was in the Cleveland office, and brought to Chicago for file and compilation, also check- against the performance and analysis that I had made of this class of work in the past.

Q. What did Mr. Dishinger tell you as to the performance which he had learned about in Cleveland?

A. I don't have it offhanded, Mr. Burr, but I can make up [fol. 3597] the tables and give you the results,—but we have the information in the office and I will be glad to submit it to you.

Q. We would like to have that. And will you also give us the sources of Mr. Dishinger's information? Do I understand you to say that he secured his information from the offices of the company in Cleveland?

A. He talked with the Division Superintendents as I understand it, or the men who have that class of work in charge.

Q. And you will find out the name or names of the man or men with whom he talked if you please?

A. Yes.

Mr. Burr: Thank you.

Q. How did you go about the compilation of your unit costs for aerial cable and, Mr. Dorsey, if it will shorten the inquiry, please feel at liberty to consider together any classes of plant which you considered together in compiling your unit costs, for example, if for two classes of plant that was done the same way, if you will so state, it will obviate the necessity of asking you with respect to two classes of plant separately.

A. I can state here as a general answer to your question that the same procedure was followed throughout the estimates of these classes of property, the exchange pole lines and toll pole lines, aerial cable, both, for both exchange and toll plant and underground cable for exchange and toll plant and exchange and toll aerial wire.

Q. Did Mr. Dishinger make the same inquiry with respect to those classes of plant that he did with respect to poles?

[fol. 3598] A. I am informed that he did, yes.

Q. And did he come back and report to you the result acquired?

A. He did, yes.

Q. Will you give us at the same time as you give us the information with respect to poles the information which he reported to you with respect to these other classes of plant?

A. Yes, sir.

Q. What is or was the basis of your allowances for splicing on both aerial and underground cable?

A. The basis of splicing was based upon an inventory in detail of splices in several large telephone properties in which we found that the ratio of the splices in place as compared with the total cable in place is approximately 10 per cent.—slightly under.

Q. Do you mean that the ratio of the splice—that that ratio of the splice to the total, applied to the material cost or the labor cost of splicing?

A. I stated the total cable in place, that is, total cable that is included material and labor.

Q. Estimating that the gangs which you took into consideration were theoretically at least employed continuously from Spring until Fall, what disposition did you make in your computation of the gangs during the winter months?

A. I didn't estimate as to what would be done in the winter months with the gangs as I felt that during the construction of the property as a whole, you would not keep as large an organization during the winter months as you would during the summer, that you would let men go. It [fol. 3599] would not apply in the same proportion with your present organization, that is where you keep the men employed all the year around.

Mr. McConnaughey: Employed how?

The Witness: Continuously.

Mr. McConnaughey: Employed how—at what?

The Witness: At the present wage scale.

Mr. McConnaughey: No, I mean at what kind of work?

The Witness: Oh, I mean in construction work, naturally.

Q. What wage rates were used for each class of labor in formulating your final unit costs, that is to say, how much money as wages for each class of work?

A. (Here witness examines books.)

Q. Give it to us per hour if you will?

A. Yes. Common labor at the rate of fifty cents per hour; line men at 70 cents per hour; foremen at a dollar per hour. A large truck $25.00 per day. Cable placing foremen at eighty-six cents per hour; cable men at 55 cents an hour. That about covers.

Q. You mean cable splicers when you say cable men, or cable erector?

A. I will find out. (After an examination.) I haven't anything on the cable splicers here. That is on the percentage basis and the inventory don't show the splicers in detail.

Q. There was cable splicing in the cable account, wasn't there?

A. Yes, sir, and the allowance of ten per cent on the total cost of the cable in place takes care of that item.

Q. Yes, I know there was an allowance of ten per cent [fol. 3600] but on what wage rates was that allowance based?

A. I didn't base it on any specific wage rate. I made analysis of inventories and prices and splicings on several large jobs and found that the ratio of the total cost of splices to the total cable plant account was ten per cent, so I used ten per cent here as an estimate of the cost of splicing in the aerial and underground cable account of The Ohio Bell Telephone Company.

Q. I think that ratio that you found included both the labor and material, didn't it?

A. Yes, sir, it did and also the loss in cable.

Q. And you didn't make any test of that proportion or ratio against the actual cost of the material or the actual time involved and the wage rate for the time used up in making the splicings, did you?

A. Well, it really would not give an answer if you were to do that because the inventory did not show the number of straight and multiple splices in the plant account. I had no way of checking what your cost would be.

Q. Didn't you have available the number of splices taken from all of the exchange inventories?

A. No, sir, I did not. If I had, why I would have priced the splices out in detail and would set them up in the report.

Q. Do you know that Mr. Dishinger did not have that information before him in Mr. Williams' office?

A. I could not answer that question; I do not know.

Q. So that all you know about it is that you didn't see it?

A. The information was not in the office in Chicago and [fol. 3601] I inquired about it and made the estimate.

Q. What wage rates did you take into consideration for station installers in arriving at your unit cost for station installation?

A. One man at 67½ cents an hour and one man at 50 cents an hour. Also a Ford truck.

Q. How much for the Ford truck?

A. $3.20 without the driver.

Q. Per what?

A. For the truck.

Q. Per day or for the truck?

A. Per day—to the cost of $3.00 for labor at the station.

Q. What wage rate did you assign to the driver?

A. The assistant to the installer would drive the truck. That is in construction or placing the subscriber's stations I wouldn't think it necessary to have a driver on the truck to wait while they were installing the instruments.

Q. Are these wages that you are talking about the payroll wage rates or the productive man-hour wage rates?

A. They are the payroll wage rates paid by the company.

Q. Very well now, you have given them for the installation; will you give them for all of the other classes of labor involved in each of your unit costs other than heretofore given?

A. I think I have given them all, Mr. Burr. Of course you understand that these are averages of your payroll.

Q. Yes.

A. There are some that are far less than that.

Q. What about the wage rate for brick layers in connection with manhole construction?

A. The manhole construction was based on the union [fol. 3602] scale of wages for placing brick. That is, brick was estimated around $42.00 a thousand in place and that scale of brick in place is based upon the prevailing union scale for brick layers in the city of Cleveland. We did not make any different estimate for manhole construction in any of the cities, the Cleveland district by far having the highest scale of wages paid for that class of work.

Q. What was the source of the plant supervision expense used in your unit cost?

A. The plant supervision expense as used in the unit cost was derived from an analysis made from the books of the company by Mr. Morse covering the years 1922, '23 and '24.

Q. You didn't do that work?

A. No, sir, I did not.

Q. But you adopted his work?

A. Yes, sir.

Q. How did you treat the accounts 706-01 and 706-02?

A. I am not familiar with those account numbers. You will have to tell me what they are.

Q. Those are the two accounts known as plant supervision expense and plant engineering expense?

A. I haven't the details of Mr. Morse's analysis here, Mr. Burr, but I can prepare those for you and when I say

17 per cent for plant supervision, that is excluding any allowance for tools. That is in addition to that and the reference makes the plant supervision comparable to Mr. Williams' figures of about 19.2 per cent.

Q. Well, we would like to have that detailed if you please. I would like to have the detail of the study of by or [fol. 3603] through which you arrived at the 17 per cent if you please.

Now, will you turn to your exhibit Number 1 if you please. Calling your attention to the items shown under the heading of labor, a little below the middle of the page, will you please give us the number of hours, the kind of labor and the wage rates by which you arrived at each of the costs starting with .362, unloading and handling and continue on down through each of the labor costs shown on that exhibit?

A. That for the 30 and 35 foot poles only?

Q. The 30 foot pole will be sufficient.

A. I can prepare such information for you.

Q. Will you please?

A. Yes.

Q. I would like to have the corresponding information for one of the items shown on each of your subsequent exhibits covering the unit costs for outside plant?

A. That is the——

Q. They are Numbers 1——

A. Exhibits 1 to 8.

Q. 1 to 8 inclusive if you please?

A. (No response.)

Q. Will you tell me if you please by what date approximately you will be able to give us that information?

A. Oh, the early part of next week. I can have it here for you.

Q. Thank you.

A. It is only a matter of copying it. That is all.

Q. What allowance have you made in your unit costs for plant supervision of labor, account 711?

A. I don't know what account 711 is, Mr. Burr.

[fol. 3604] Mr. McConnaughey: Plant supervision of labor.

Q. Very well, will you give us the source of the sundry disbursement allowance used by you?

A. By sundry disbursements, you mean, such as trucking and hauling, do you not?

Q. I didn't get your answer at all.

A. I say by sundry disbursements, that is the item that appears in your completion reports as miscellaneous expense of hauling, trucking, team hire.

Q. Boarding and lodging?

A. Boarding and lodging, yes, sir. I allowed 20 per cent for such expenditures, that is for board and lodging, pay above the cost of trucking and so forth in the toll line account. I allowed nothing for board and lodging in the construction of the exchange plant.

Q. Did you make allowance for all the other items except board and lodging in the cost of the exchange, for poles?

A. I made allowance for erecting that pole, that is shown in the unit costs.

Q. How did you arrive at the comparison which you say you used for that item?

A. You mean for board and lodging on toll line construction.

Q. No, the 20 per cent?

A. That is the idea, it covers it.

Q. It covers it, the board and lodging, I understand is included in it, but how did you arrive at 20 per cent for all the items?

A. That 20 per cent only covers board and lodging for cap. expense. The hauling of poles and distributing is a separate item of the unit cost.

Q. Well, why 20 per cent instead of some other figure? [fol. 3605] A. Because from the analysis, it was shown and also from the discussion with your superintendent and studies made elsewhere, it was found that the normal allowance for men that are either boarded at camps operated by the company or given an allowance above the salary or scale of wages that were obtaining, that 20 per cent of their wages sufficiently covered that additional compensation and it may be treated as additional compensation or as an allowance for board and lodging.

Q. Did you make the inquiries or did Mr. Dishinger?

A. Mr. Dishinger made the inquiries.

Q. As I understand it, you based your labor costs contained in your units almost entirely on the reports brought to you by Mr. Dishinger, is that right?

A. No, sir, the labor costs, when you take into consideration the performance were practically based upon the information that he gathered and also upon the past experience in this class of work.

Q. Yes, but now the performance in part was based entirely on what Mr. Dishinger reported to you, wasn't it?

A. No, sir, not altogether.

Q. Well, what actual experience did you have in the performance part of the unit costs or in compiling or computing that performance between 1913 and 1925?

A. I have since 1913 to 1925, appraised telephone properties in West Virginia, Virginia, Maryland, Alabama, Chicago, part of the Illinois Bell Telephone system through the State of Illinois and several properties in Michigan and Wisconsin.

[fol. 3606] Q. Did you use the same labor units in your appraisal in each of those states?

A. No, sir, I did not.

Q. This cost of labor factor or element differs in different states, doesn't it?

A. The performance differs slightly depending upon the conditions of the territory that you have to construct these lines over and also there is a difference in the wage scale paid to different classes of employees engaged in this work.

Q. What information about Ohio have you which enabled you to differentiate between Ohio conditions and those prevailing in other states, beyond this information which Mr. Dishinger brought to you from Cleveland?

A. The information that he brought from Cleveland was to check the gang and the performance of the data that had been gathered in previous cases.

Q. Yes, but——

A. (Continuing) And the details, if I may add, of such performance were modified to meet Ohio conditions.

Q. Yes, but how did you modify any of your data secured in other states from performances in other states in order to make your unit costs properly reflect Ohio conditions?

A. The modifications which took place in adjusting the units checked with the completion reports all compared with work shown in the two year period as compared to what we found in applying the unit costs on the same materials as found in the completion report.

Q. Now, let me take you back again to these results which you say you did find in other states and as to which you say there is a variation between the states. I believe that you [fol. 3607] said that you did not make up any tentative unit costs?

A. No, sir.

Q. Now then, you of course started out with something when you were computing the performance conditions for Ohio; what was that starting point?

A. That starting point was the number of men required to perform a certain piece of work; that is if you are constructing poles, poles up to the height of 40 feet take one gang while poles above that height, as the pole is heavier and longer and harder to handle it, require additional men to construct the same.

Q. Yes, but what information did you have as to the performance results of Ohio gangs doing that kind of work?

A. The only check that I had against my units was the discussion that Mr. Dishinger had with superintendents, as to what his men were doing at the present time or at the time of the investigation.

Q. I believe you said that the 20 per cent. allowance which you made for board and lodging in the case of toll pole line construction was based partly on analyses and partly on discussions with someone with respect to that item; what was the extent of the analysis and what did it show if you please?

A. The discussion or information that Mr. Dishinger gathered was that the company had two classes of employees, one that was——

Q. Well, that is not what I am asking. You said that you made an analysis as I understand it?

A. Not of the allowances made by the Ohio Bell Telephone Company. I stated that I had made allowance of similar construction on transmission line and toll pole line work.

[fol. 3608] Q. For Ohio?

A. No, not for Ohio—and had checked that against the performance or the allowance made by your company at the present time and found that 20 per cent. in excess of the scale of wages paid the employees covered their board and lodging.

Q. Is that the analysis that you made in this case?

A. I stated I made no analysis in this case, Mr. Burr.

Q. Well, that is the analysis then that you referred to in your previous answer?

A. Yes.

Q. What about the discussions which combined with your analysis enabled you to arrive at the 20 per cent for board and lodging; were those discussions had by you with someone connected with the Ohio Bell Telephone Company or were they discussions which Mr. Dishinger had?

A. Which Mr. Dishinger had with the man that gave him the scale of wages paid employees in local work, that is on toll work.

Q. You didn't make any independent investigation?

A. No, sir.

Q. Or have any independent discussions of your own?

A. No, sir, I did not.

Q. Do you know with whom Mr. Dishinger had the discussions?

A. He mentioned the name. I don't recall it at the present time, but we have a record of it in the office.

Q. Was it the same as the one who gave him the wage scales?

A. Yes, sir.

Q. Well, now, as a matter of fact, didn't Mr. Dishinger get the wage scales from or in the plant accountant's office [fol. 3609] in Cleveland?

A. I think that he did; I don't know—he mentioned the man's name that he got them from.

Q. Well, if he did, he also had these discussions in that office with the plant accountant?

A. I could not say as to that, Mr. Burr, he better answer.

Mr. Burr: That is all for this evening. I thank you, Mr. Dorsey.

Commissioner Poor: If that is all at this time, we will recess to the date now suggested. What was that—February 15th?

Mr. McConnaughey: February 15th.

Mr. Burr: I assume we will get all of this information you are asking for within a week?

The Witness: Possibly before that. It is only a matter of copying it off. That is all we have to do.

And thereupon the further hearing of this case was adjourned until Tuesday, February 15th, 1927, at 10:00 o'clock, A. M.

* * * * * *

[fol. 3610] And also R. K. Morse, recalled as a witness on behalf of the State of Ohio, having been heretofore duly sworn, testified as follows:

Examined by Mr. McConnaughey:

Q. Mr. Morse, since you testified before, have you made any further examination of the records and books of account of The Ohio Bell Telephone Company?

A. I have.

Q. And what have you covered in that further examination?

A. I covered the transactions of the year 1926 and prepared tables incorporating the data for the year 1926 for all the tables that have been prepared in connection with the former testimony.

Q. That is, you have brought the data set forth in the several tables which you have heretofore introduced now to what date?

A. Down to December 31st, 1926.

Q. Your previous testimony brought these matters down to December 31st, 1925?

A. Yes.

Q. What is the first table that you have to present?

A. The first table that I have prepared is entitled "Statement of Income, Profit and Loss and Surplus for the year ended December 31st, 1926".

Q. From what is that taken?

A. This was taken from the books and records of The Ohio Bell Telephone Company at Cleveland and sets forth the income account of the Company for the year 1926, both [fol. 3611] in amounts and reduced to a per station basis.

Mr. McConnaughey: We offer this in evidence, to be marked as Morse Exhibit No. 7.

And thereupon the Document last above referred to is admitted in evidence on behalf of The State of Ohio and is herewith submitted and marked Morse Exhibit No. 7.

Q. Have you any explanatory comment to make with reference to that, Mr. Morse?

A. This simply shows that the total operating revenues for the year 1926 amounted to $32,927,524.95, or $60.01 per station.

The telephone operating expenses were $22,331,713.95, or $40.70 per station.

The net telephone revenues were $10,595,811.00, or $19.21 per station.

It shows a gross income of $7,945,163.67, or $14.49 per station.

And a net income of $6,131,383.71, or $11.18 per station.

It also shows the net income and the amount transferred to surplus and comes down at the end to a balance in the surplus account as of December 31st, 1926, amounting to $1,695,580.01, or $3.09 per station.

Q. What is the next statement that you have prepared, Mr. Morse?

A. The next statement is entitled "Statement of Telephone Operating Revenues for the year ended December 31st, 1926", and sets forth the different accounts carried in [fol. 3612] the classification for telephone operating revenue, both in amount and reduced to a per station basis.

This table shows a telephone operating revenue of $32,927,524.95, or $60.01 per station, and is the same as the first item in Exhibit No. 7.

Q. Can you tell us, Mr. Morse, where in your previous testimony the previous figures covered by this exhibit may be found, just for the purpose of relating this to the previous testimony?

A. The figures up to the end of the year 1925 corresponding to this table are found on pages 26 and 27 of Hagenah Exhibit No. 1, and filed December 9th, 1926.

Q. And where are the previous figures covered by your Exhibit No. 7 to be found?

A. They are found on pages 22, 23, 24 and 25 of Hagenah Exhibit No. 1.

Mr. Burr: Let the record show an objection to the per station figures shown in these two exhibits to the extent that their purpose may be to carry out the comparison shown on Morse Exhibit No. 1. That exhibit has not been admitted in evidence, and to the extent that the per station figures in Morse Exhibits Nos. 7 and 8 may be used in connection with Morse Exhibit No. 1, those per station figures ought also to be excluded.

Chairman Marshall: The objection will be overruled.

Mr. Burr: Note an exception.

Mr. Connaughey: I assume that objection can be considered in connection with the other exhibits?

[fol. 3613] Mr. Burr: Yes.

Q. Now, Mr. Morse, how have you determined these per station figures; what number of stations have you used and what does that figure represent?

Mr. Burr: I make the same objection.
Chairman Marshall: Objection overruled.
Mr. Burr: Note an exception.

A. I took the Company's stations at the beginning and at the end of the year 1926 and found the mean by dividing the sum of those two amounts by two and used that as the divisor in arriving at these per station figures.

Q. And that is the method that you have used in all instances where you have used a per station figure in these exhibits?

A. Yes.

Q. What is the average number of stations as thus determined for the year 1926?

Mr. Burr: Note the same objection.
Chairman Marshall: Objection overruled.
Mr. Burr: Note an exception.

Q. I suppose it should be the mean number of stations?

Mr. Burr: Same objection.
Chairman Marshall: Objection overruled.
Mr. Burr: Note an exception.

A. The number of stations used as the divisor in this exhibit and the other exhibits was 548,708.

Q. What is the next table that you have prepared, Mr. Morse?

A. The next table is entitled "Statement of Telephone [fol. 3614] Operating Expenses for the year ended December 31st, 1926", and sets forth, according to the classification of accounts, the operating expenses of the Company for the year 1926, both in amounts and on a station basis.

The total operating expenses of $22,331,713.95, or $40.70 per station, is the same as the second line in Exhibit No. 7, just filed.

Mr. Burr: Let the record show the same objection as to the per station figures, shown on this Exhibit, which I assume to be Exhibit No. 9.

Mr. McConnaughey: We offer the statement of telephone operating revenues for the year ended December 31st, 1926,

as Morse Exhibit No. 8, and also the exhibit to which he has just testified of telephone operating expenses for the year ended December 31st, 1926, as Morse Exhibit No. 9.

Mr. Burr: We renew our objection to the per station portion of the exhibits for the reasons heretofore stated.

Chairman Marshall: They may be admitted; the objection will be overruled.

Mr. Burr: Note an exception.

And thereupon the Documents last above referred to are admitted in evidence on behalf of the State of Ohio, subject to the above objection and exception of The Ohio Bell Telephone Company, and are herewith submitted and marked respectively Morse Exhibits Nos. 8 and 9.

[fol. 3615] Q. And where is the previous information of that same character found, Mr. Morse?

A. The corresponding information for the period ended December 31st, 1925, is found on pages 28, 29, 30 and 31 of Hagenah Exhibit No. 1.

Q. What is the next table that you have prepared, Mr. Morse?

A. The next table that I have prepared is "Balance Sheet as of December 31st, 1926", and sets forth the assets and liabilities of the Company as of that date.

Q. And from what has that been taken?

A. This was taken from the books and records of The Ohio Bell Telephone Company in Cleveland and agrees with the books.

Q. On page 2 of that Exhibit I notice a note at the bottom of the sheet; will you please explain that note?

A. The note shows a total of $2,385,566.20 explanatory of the item under "Surplus" called "Appropriated Surplus". That item represents 50 per cent of the estimated net revenues from rates collected under bond.

Mr. McConnaughey: We offer this exhibit in evidence, to be marked as Morse Exhibit No. 10.

And thereupon the Document last above referred to is admitted in evidence on behalf of The State of Ohio and is herewith submitted and marked Morse Exhibit No. 10.

Q. What is the next table you have prepared?

A. The next exhibit is entitled "Net additions to Property and Plant during 1926 and Book Value as of December 31st, 1926". It shows the additions during the year to the

[fol. 3616] classified property accounts and the total according to the books in each of those classified property accounts as of December 31st, 1926.

The total additions shown by the table for the year 1926 amount to $13,034,611.63, and the book value of the property and plant as of December 31st, 1926, amounts to $120,738,616.98.

Q. What is the classification of plant that is found in that exhibit?

A. The standard classification of accounts prescribed by The Interstate Commerce Commission.

Q. Will you explain the last item of "Construction Work in Progress", and tell us what that covers?

A. That covers the balance in the construction work in process account as of December 31st, 1926, and includes all the property of the Company that is not yet in service. In one of the larger items making up this sum is the construction of the new office building.

Q. How much of that item is represented by the new office building in Cleveland?

A. I could not state that definitely. I made an analysis of the construction work in process account and found what items were included in it but I cannot say that the item of "Buildings" is all in connection with the new office building.

Q. Will you read into the record, Mr. Morse, the items that go to make up the last item on that Exhibit No. 11, making up the total of $9,055,852.02, as you have taken it from the books of the Company?

[fol. 3617] A. Right of way $568.90
Land $352.52
Buildings $3,846,653.74
Central office telephone equipment, manual $1,323,511.20
Central office telephone equipment, panel type $2,244,307.89
Central office telephone equipment, step by step type $1,123,407.34
Other equipment of central offices $29,292.89
Station apparatus, dial type $14.27
Private branch exchanges $23,474.40
Exchange Pole Lines $7,762.01
Exchange Aerial Cable $93,112.45
Exchange Aerial Wire $2,572.08
Exchange Underground Conduit $34,238.71

Exchange underground cable	$187,851.58
Toll pole lines	$32,895.58
Toll aerial cable	$37,911.97
Toll aerial wire	$31,111.65
Toll underground conduit	$5,537.00
Toll underground cable	$30,031.84
Toll submarine cable	$1,239.00
Total	$9,055,852.02

Q. In the column of this exhibit which shows the net additions under the heading "Year ended December 31st, 1926" there are a number of figures in red; what does that indicate?

A. It indicates that the retirements of the particular classes of property were in excess of the gross additions for that particular class of property.

Q. And to which items does that apply? Just name the [fol. 3618] items.

A. Right of way, exchange aerial wire, toll pole lines, toll aerial wire, general tools and implements, and miscellaneous construction expenditures.

Q. And also the toll pole lines?

A. Yes; that is the result of the addition. Of course the credit items might be caused by transfers between accounts. It does not necessarily mean that plant is actually taken out of service and not replaced by some other kind of plant.

Q. But that it is transferred from one account to another?

A. Yes; for instance, wire might be taken down and cable put up in its place; items of that kind, which might be included as transfers rather than as actual retirements; they are all taken into consideration in arriving at the figures.

Mr. McConnaughey: We offer this exhibit in evidence to be marked Morse Exhibit No. 11.

And thereupon the Document last above referred to is admitted in evidence on behalf of The State of Ohio and is herewith submitted and marked Morse Exhibit No. 11.

Q. Where is the corresponding information with reference to the time previous to 1926 in your previous testimony?

A. The information corresponding to the information given in Exhibit No. 11 is found on page 35 in Hagenah

Exhibit No. 1, and shows a total property and plant account as of December 31st, 1925, of $107,704,005.35.

Q. What is the next table that you have prepared?

[fol. 3619] A. The next exhibit is entitled "Net additions to property and plant from July 1st, 1925, to December 31st, 1926" or a period of 18 months subsequent to the date of the appraisal of the property.

This exhibit shows a total of the net additions during the 18 months amounting to $19,802,869.62, and this figure represents the net increase in the book value of the property and plant account during that period of 18 months.

Mr. McConnaughey: We offer this exhibit in evidence as Morse Exhibit No. 12.

And thereupon the Document last above referred to is admitted in evidence on behalf of The State of Ohio and is herewith submitted and marked Morse Exhibit No. 12.

Q. To what previous testimony in this case might that be considered supplementary, Mr. Morse?

A. It would represent the additions to the property and plant account subsequent to the date of the appraisal, and in arriving at the present value of the property as of December 31st, 1926, this amount would have to be taken into consideration in connection with the appraisal of the property as of June 30th, 1925.

Q. There are some red figures in this exhibit; what is the explanation of those figures?

A. Those represent retirements of property under the various classifications shown.

[fol. 3620] Q. And what items are thus shown; just name them?

A. Exchange aerial wire, toll underground conduit, general tools and implements, and miscellaneous construction expenditures.

Q. What is the next table that you have prepared?

A. The next table is entitled "Reserve for Accrued Depreciation for the year 1926", and sets forth an analysis of that reserve account as shown by the Company's books for the year 1926.

The reserve balance at the end of the year was $12,729,276.17.

The total credits to the reserve during the year were $5,823,440.50.

The total debits to the reserve during the same period were $6,619,186.30.

Resulting in a decrease in the reserve during the period of $795,745.80.

The balance in the reserve at the end of the year was therefore only $11,933,530.37.

Q. What items are included under the heading of "credits charged to clearing accounts $255,945.09"?

A. The stable and garage equipment and tools and implements. I am not sure whether that is all or not, but I think that is all there are.

Mr. McConnaughey: We offer this exhibit in evidence to be marked Morse Exhibit No. 13.

And thereupon the Document last above referred to is [fol. 3621] admitted in evidence on behalf of The State of Ohio and is herewith submitted and marked Morse Exhibit No. 13.

Q. What is the next table that you have prepared, Mr. Morse?

A. The next table is entitled "Sources and Application of Funds", and shows the various sources from which The Ohio Bell Telephone Company has obtained the funds which have gone into the fixed capital account and other funded investments.

This shows first the capital stock, amounting to $78,225,646.88.

Funded debt, $5,461,000.00.

Advances from system corporation, $18,946,607.94.

Fixed capital reserves amounting to $12,192,807.00.

And surplus of $4,081,146.21.

Representing a total of capital liabilities and surplus of $118,907,208.03; to which there are other miscellaneous liabilities of $4,221,528.24, and miscellaneous assets in excess of working liabilities of $1,951,594.02; or a total funds of $121,177,142.25.

These funds were represented by fixed capital of $120,738,616.98, and permanent investments other than plant of $438,525.27.

The fixed capital of $120,738,616.98 is the same as shown by Exhibit No. 11 and represents the book value of the property and plant account as of December 31st, 1926.

Mr. McConnaughey We offer this exhibit in evidence as [fol. 3622] Morse Exhibit No. 14.

And thereupon the Document last above referred to is admitted in evidence on behalf of The State of Ohio and is herewith submitted and marked Morse Exhibit No. 14.

Q. What previous exhibit gives the like information prior to 1926, Mr. Morse?

A. This corresponding information for the year 1925 was shown in Morse Exhibit No. 6.

Q. Going back to Morse Exhibit No. 13, where is the previous information of the same character as to the reserve for accrued depreciation prior to 1926 in your previous testimony?

A. The corresponding information to Exhibit No. 13 is contained in Morse Exhibit No. 5 for the year 1925.

Q. Now what is the next table that you have prepared?

A. The next table is entitled "Analysis and Distribution of Licensee Revenue Debtor", and shows the analysis of that account for the year 1926 in the same way as was shown in a former exhibit for the year 1925.

Q. Have you the number of that exhibit at hand?

A. In Hagenah Exhibit No. 5. This exhibit recomputes the figures for the year 1926. It shows the total licensee revenue debtor account of $1,277,943.99 segregated to an annual rental charge of $457,073.76.

Q. Annual rental charge for what, Mr. Morse?

A. For stations, subscribers stations; and the remainder of the payment to cover services rendered, amounting to $820,870.23.

[fol. 3623] Mr. McConnaughey: We offer this exhibit in evidence to be marked Morse Exhibit No. 15.

And thereupon the Document last above referred to is admitted in evidence on behalf of The State of Ohio and is herewith submitted and marked Morse Exhibit No. 15.

Q. What is the next exhibit you have prepared?

A. This exhibit is entitled "Adjusted Net Income Available for Return on fair value of property used and useful as of December 31st, 1926".

It shows the telephone operating revenue as per the books; the telephone operating expenses and the net telephone operating revenues.

Q. Telephone operating expenses as per the books?

A. As per the books, and the net telephone operating revenus as per the books; also the deductions from net telephone operating revenues; the net operating revenue; the net non-operating revenue; gross income; deductions from gross income, and the net income per the books available for return on the valuation.

The net income available for return on the valuation according to the books for the year 1926 was $7,352,158.74.

This amount has been adjusted in the exhibit by the addition of $165,279.82, representing the difference in the depreciation charge; interest on the average credit balance in a depreciation reserve——

Q. Just a moment, Mr. Morse—well, go ahead and com-
[fol. 3624] plete your statement?

A. Interest on the average credit balance in the depreciation reserve amounting to $725,086.51; one-half of the Licensee revenue debtor account exclusive of instrument rental, amounting to $410,435.11; and a credit adjustment due to increase in Federal Tax to cover the net income credits amounting to $175,608.20.

This results in a total adjusted net income available for return amounting to $8,477,351.98.

This exhibit was prepared on the same basis as a former exhibit,——

Q. What is the number of that?

A. That is Hagenah Exhibit No. 6, and shows the figures for the year 1926; the former exhibit showing the figures for the year 1925.

Q. Mr. Morse, in this Exhibit No. 16, to which you have just testified, under the heading of "Adjustments", the second item has a blank there, Hagenah Exhibit blank; what should be filled in there?

A. It is based on the analysis of the property and plant account shown in Hagenah Exhibit No. 1, plus the additions for the year 1926.

Commissioner Maullar: Are these the actual revenues derived under the rates that are now being charged under bond?

The Witness: Down to the item "Net income available for return on valuation". That item, per the Company's books, includes the revenue that is actually being collected under bond.

Mr. Burr: That is to say, $7,352,158.74?

[fol. 3625] The Witness: Yes.

Mr. Burr: Do you see that item, Mr. Commissioner?

Commissioner Maullar: Yes.

By Mr. McConnaughey:

Q. And I call your attention to the third line "Total telephone operating revenue Hagenah Exhibit blank"; what should that be?

A. That should be Morse Exhibit 8.

Mr. Burr: Cannot the record copy be corrected so as to show that?

Mr. McConnaughey: Yes.

Q. Now in the next line "Telephone Operating Expenses Hagenah Exhibit blank"; what should that be?

A. That should be Morse Exhibit 9.

Mr. Burr: May the official copy be corrected accordingly?

Mr. McConnaughey: Yes, it has been corrected. The official copy has been corrected accordingly.

Mr. Burr: Just a moment. There is another Hagenah Exhibit blank shown in the 8th line from the bottom on Exhibit No. 16; what should that be?

Mr. McConnaughey: I am just asking about that.

Q. Referring again to the 8th line from the bottom, "Depreciation charge on basis of adjusted book cost, Hagenah Exhibit blank", you have said that should be Exhibit 1?

A. It was based on Hagenah Exhibit No. 1.

Q. What page?

A. Plus the additions for the year 1926.

Q. What page of Hagenah Exhibit No. 1, so we can refer [fol. 3626] to it exactly?

A. Page 12 of Hagenah Exhibit No. 1.

Q. Plus the additions for the year 1926 as shown on Morse Exhibit what?

A. 11.

Q. Morse Exhibit No. 11?

A. Yes, sir.

Q. Now what is the previous exhibit setting forth this same information down to December 31st, 1926? You have already stated that to be Hagenah Exhibit No. 6?

A. Yes, sir.

Mr. McConnaughey: This exhibit is offered in evidence as Morse Exhibit No. 16.

And thereupon the Document last above referred to is admitted in evidence on behalf of The State of Ohio and is herewith submitted and marked Morse Exhibit No. 16.

Mr. McConnaughey: That is all.

Mr. Burr: Have you anything further to offer at this time?

Mr. McConnaughey: No, we haven't anything more to offer.

Chairman Marshall: You may cross-examine.

Mr. Burr: We would like an opportunity to examine these exhibits before we cross-examine Mr. Morse, so he may stand aside and Mr. Hagenah may take the stand for cross-examination.

[fol. 3627] And also WILLIAM J. HAGENAH, called for purposes of cross-examination, having been heretofore duly sworn, testified as follows:

Cross-examined.

By Mr. Burr:

Q. Calling your attention first, Mr. Hagenah, to Morse Exhibit No. 16 just offered in evidence, and particularly to the item of net non-operating revenue $497,859.22, shown at about the middle of that exhibit, that, if I understand it, represents the revenue from non-operating telephone property, does it not?

A. Yes.

Q. And where in your appraisal——

A. Just a moment; let me see that exhibit.

Q. And where in your appraisal have you included the non-operating telephone property which has produced that non-operating revenue?

A. There is no non-operating property included in the appraisal. It is property used and useful in service.

Q. In other words, if I understand it, you have included in the Company's revenues revenue from property owned by the Company but which you have excluded from your appraisal of its property; is that correct?

A. Yes. I consider the non-operating revenues as incidental to the general operations of the property. The

sources of the non-operating revenue are in evidence here and they consist of rent, revenues, dividend revenues, interest revenues and miscellaneous non-operating revenues.

[fol. 3628] Q. Isn't there included in that net telephone non-operating revenue the item of interest charged during construction?

A. I believe it is; I am not familiar with the details, but I think you are right.

Q. And that interest represents property to be used and useful in the furnishing of service to the public?

A. That is right.

Q. Where in your appraisal have you included any of the construction work in progress as offsetting that interest during the construction on the construction work in progress?

A. It has not been included, on the theory that it was not used and useful property. There is, however, some distinction that may be drawn there in refinements, and inasmuch as you have referred to that question now I would like to state that in the final analysis in determining the true measure of return to which the Company is entitled, some adjustment will have to be made that will operate to increase the rate base because of the property that is included in the construction in process account. This refers particularly to some large expenditures which the Company is making and which are necessary to enable it to carry on its general operations but which will not produce any additional revenue. Any rates based on the appraisal exclusive of such further adjustments would not, for the period during which such rates were effective, provide the Company with any return on such capital. I refer particularly to the large office building construction which is going on in Cleveland. The building is not yet occupied but it will be early [fol. 3629] in 1927, and for all practical purposes that use must be anticipated because it furnishes the Company with a part of the used and useful property necessary to carry on its operations and which will not increase the revenue of the Company in any degree, although it will largely increase the amount of capital devoted to the telephone service. I am unable to say what the amount of that would be, but it is in terms of millions.

Q. I was going to ask you whether or not you had made any valuation of that amount?

A. I have not. I have left that open for the present so that it might be treated at the last date that this case would be open for final adjustment. It is, in my judgment, an open account, and the analysis of the construction in process account at that time may reveal other items besides that office building that would have to receive the same treatment; as, for example, other buildings in construction in different parts of the State.

Q. I understand that in making your reproduction cost new appraisal of the property of the Company—and when I say "Company" that refers, of course, to The Ohio Bell Telephone Company unless I distinguish as between it and some other company; I say I understand that in making your reproduction cost new appraisal of the property of the Company as of June 30th, 1925, you have used material prices of The Western Electric Company wherever applicable; that is correct, isn't it?

A. Yes.

Q. I believe also that as a result of the study which you [fol. 3630] made in connection with this case and with other cases you found the prices of The Western Electric Company to the Associated Bell Companies, including The Ohio Bell Telephone Company, to be less than the prices of The Western Electric Company to the trade generally for the same articles, and also to be less than the prices of independent manufacturers to the trade generally for the same or similar telephone property; that is true too, isn't it?

A. Yes.

Q. Now the fact that the Western Electric prices to The Ohio Bell Telephone Company are lower than those to the trade generally results from the existence of the so-called Western Electric contract, in evidence in this case, do they not?

A. Yes.

Q. And the benefits of the Western Electric contract are among the benefits assured to The Ohio Bell Telephone Company by reason of its License Contract with the American Company; that is also true, isn't it?

A. Yes.

Q. So that there is a material savings to The Ohio Bell Telephone Company as the result of the License Contract and, through it, the Western Electric contract?

A. Yes, sir.

Q. If The Ohio Bell Telephone Company had been an independent company, not having the benefit of the Western Electric Contract, would your appraisal of its property have been greater or less than the amount of your appraisal in this case?

A. Greater. I endeavored to give the public the full benefit of the favorable results of the contract.

[fol. 3631] Q. Can you say approximately how much greater?

A. I have not made a comparison of the appraisal in this case on Western Electric prices and on open market prices; but I have within recent years made such comparisons of other and similar properties in Eastern and Central States.

One I have particularly in mind showed a result of between seven and eight per cent in favor of the public. In other words, if the Western Electric contract had not been in existence the appraisal result for the entire property would have been from seven to eight per cent higher than I found it to be on the basis of the contract prices. That is for the entire property. The percentage is greater for individual accounts.

Q. In the West Virginia case heretofore referred to, in which you appraised the property of The Chesapeake & Potomac Telephone Company in West Virginia for the State of West Virginia, did you not make an estimate of the difference between your appraisal and what it would have been if the Company there had not had the benefit of the Western Electric prices?

A. I do not recall; I may have.

Q. You do not recall that at page 305 and page 306 of the record in that case you testified as follows: "Concluding my answer, I would say that the accounts affected would be increased at least from eight to ten per cent over the prices that are shown in Exhibit No. 17," Exhibit 17 having been your appraisal exhibit in that case?

A. I do recall I testified to that, or along that line, and the statement that you read is undoubtedly correct, but I want [fol. 3632] to call your attention to the fact that the language says "The accounts affected"; a moment ago I stated "for the company as a whole", and that the percentage was greater for individual accounts. I recall it has been as

much as twelve per cent in individual accounts, in some appraisals.

That difference arises out of the fact that in one instance land was included, and buildings, which are not affected by the Western Electric contract, and in the other cases they were not included; where such accounts not affected by the Western Electric contract are included the percentage to which you refer is naturally greater.

Q. Now applying the same principle to the present case, I understand you to mean that except for the existence of the Western Electric and the License Contract your appraisal in this case would, with respect to the material affected by the Western Electric contract, have been materially higher than it now is?

A. Yes.

Q. Now in addition to the savings to the Company by reason of its purchase of material from the Western Electric contract, on account of which your appraisal has been reduced in the respects stated, is it not true that there is a considerable annual saving to The Ohio Bell Telephone Company due to its purchase from the Western Electric Company of material and supplies used for current maintenance purposes and reflected in the operating expenses of the Company?

A. Yes.

Q. Isn't it also true that in addition to reducing the part of your appraisal of the physical property on account of [fol. 3633] the Western Electric contract you have also reduced your allowance for working capital to the extent that the material and supplies included in that item reflect prices of Western Electric material and Western Electric supplies to The Ohio Bell Telephone Company?

A. Yes; and also includes the benefit of the Western Electric warehousing service, which is a material item.

Q. Yes, I forgot that. In the summary of your appraisal as of June 30th, 1925, contained on page 2 of your Exhibit No. 2, you show, opposite the line "Total physical property", $112,613,847.00 for reproduction cost new, and $97,582,375.00 for present value; as I understand it, those amounts include the direct or specific construction expenditures shown as $96,045,925.00 for reproduction cost new, and $83,236,906.00 for present value, plus the indirect expenditures of $16,567,922.00 and $14,356,469.00 shown under the

columns headed "Reproduction cost new" and "Present value" respectively; that is correct, is it not?

A. Yes.

Q. Will you please state whether there is included in your valuation of the total physical property, including the direct and indirect construction costs above enumerated, any going concern value or anything for the element of value known as going concern?

A. No, none whatever.

Q. I assume also that no going concern value is included in the item shown for working capital?

A. That is right.

Q. That, as I understand it, none of the property on page [fol. 3634]. 2 of your Exhibit 2 evaluated above the line for going concern value includes or contains any allowance for the evaluation of going value?

A. That is right.

Q. It is true, is it not, that such items as engineering, administrative and legal expense, liability insurance, taxes, and interest during construction, which are a part of the indirect construction costs, are also a part of the physical property, inasmuch as they represent a part of the cost of the physical property in place?

A. They are a part of the physical property.

Q. And it is true, is it not, that the going concern value of the property of The Ohio Bell Telephone Company as you have evaluated that item represents an additional value over and above the value of the physical property; that is to say, it represents the value of an assembled and established plant doing business and earning money over one not thus advanced?

A. That is right.

Q. With respect to your evaluation of the item of going concern value, the first method shown in the record at page 2121, shows a going concern value of more than 13 million dollars for The Ohio Bell Telephone Company as of June 30th, 1925, does it not?

A. Yes; on page 2132 of the record I used a rough check which gave a result of 13 million dollars in round figures.

Q. I am asking about page 2121?

A. That is right; the same figure appears on page 2121 of the record.

Q. Now the same going concern value arrived at by your second method, based on a study of the relative credit of

[fol. 3635] The Ohio Bell Telephone Company at different times and the credit of a new company operating under the same or substantially the same conditions, was something over 16 million dollars, was it not?

A. Yes; about 16 million dollars.

Q. According to the third method, shown in your testimony at page 2122 of the record, namely, that of reproducing both the physical plant and the business, you arrived at a going concern value in excess of eleven per cent of the physical property, or an amount well in excess of 12 million dollars?

A. Yes.

Q. And haven't you in other cases estimated the going concern value of a utility such as The Ohio Bell Telephone Company at amounts equal to one year's gross earnings in some cases, and one year's operating expenses in others?

A. Yes, I have used various methods as a check.

Q. On either of those two last bases would your evaluation of the going concern value of the property of The Ohio Bell Telephone Company in this case have been greater or less than that contained in your appraisal?

A. Greater.

Q. So that by applying any one of the bases discussed in your testimony and by us this morning, you would have arrived at a going concern value for the property of The Ohio Bell Telephone Company in excess of the ten per cent of the reproduction cost new of the property, would you not?

A. Yes. If I had accepted any one of these measures alone and excluded all other factors, I would have found that that single evidence of going concern value was greater [fol. 3636] than ten per cent. There are, however, matters which should be brought out in connection with each by way of explanation. The application of any one of those methods is merely evidence tending to show the going concern value, and is not absolute proof of it.

Q. I recognize that, but what I was asking about is this; you referred to certain bases, none of which, you insisted, were the correct; I concede that; but you did refer to several bases, and I am simply asking you whether or not, if any one of those bases had been applied, the going concern value of the property would not have been greater than that shown in your appraisal?

A. Yes; if I had accepted any one of them as conclusive, the result would have been higher for those which I men-

tioned. My final judgment figure was determined largely by the conclusion of The United States Supreme Court in the Indianapolis Water Company case, and was also justified by the analysis of the various methods which I used here. Some of these methods which indicated a going concern value somewhat higher than ten per cent were used many years ago before the public utilities had reached their present state of high development, and those methods themselves have lost much of their popularity and use with Commissions. As the credit of the companies has been better established the service has been more widely developed and saturated in the different communities.

Q. Interpolating for a moment the matter in respect of rates rather than valuation; have you had occasion at any time to consider the advisability and propriety of service [fol. 3637] connection charges as a part of the balanced rate schedule of a telephone company such as The Ohio Bell Telephone Company?

A. Yes.

Q. Are you familiar with the service connection charges of the Bell System generally?

A. Yes.

Q. You also, of course, understand the principles underlying it?

A. Yes.

Q. In your judgment is it for the benefit of the public that service connection charges such as those in force throughout most of the Bell System should be made operative by a company such as The Ohio Bell Telephone Company as a part of the balanced rate schedule?

A. I think they should be made so operative, and I have always testified the same way in every case where I have testified in telephone rate investigations.

Q. I did not know whether you had ever been interrogated on the subject?

A. Yes, I have testified on that subject in a number of cases. I think it is a service matter and it is to the benefit of the service that such a charge be incorporated in the rate structure; it reduces a large amount of expense and interruption of the service to the company; the party who incurs such cost or desires to have the service in question performed for his benefit should be made to pay for it and the cost not distributed over the entire service.

Mr. McConnaughey: You are referring to the general practice now rather than to the particular practice in The Ohio Bell Telephone Company case?

[fol. 3638] The Witness: Yes; that is the general principle.

By Mr. Burr:

Q. With respect to your appraisal in general, I am assuming that the amounts shown for the various items of property in your appraisal represent your judgment as to the reproduction cost new and the value in present condition of those items, but at the risk of a little repetition I am going to ask you with respect to some of them; for example, do the amounts shown in your Exhibits 2 and 3, in the column marked "Reproduction cost new", represent your judgment of the reproduction cost new of the various classes of plant of The Ohio Bell Telephone Company which are evaluated as of June 30th, 1925?

A. Yes.

Q. Calling your attention specifically to the item of right of way, in evaluating that item, which is the first one in your appraisal Exhibit No. 2, am I correct in understanding that the amount shown for it has been arrived at by applying three per cent of the total reproduction cost new for the outside plant? I am now referring to the record, page 2079.

A. Yes, the allowance for working capital I have arrived at by applying three per cent to the outside plant account to which right of way is related.

Q. That being so, isn't it true that any increase in your reproduction cost new appraisal of outside plant would result in a corresponding increase in your appraised value for the right of way?

A. Yes.

Q. In evaluating the item of right of way, have you always arrived at it by applying three or more per cent to the outside plant?

[fol. 3639] A. No; I have applied different methods.

Q. Why did you use the percentage method in this case?

A. Largely because of the study which Mr. Sloan had made and his conclusion that the relationship was approximately three per cent; he, however, reached a much larger sum because he applied it to larger appraisal results for the accounts to which the right of way applied. The figure also checked closely with my general judgment as to right of way expenses and the book cost of right of way in this

case, which book cost, however, was subject to various adjustments owing to the state of the record which was finally closed into the present plant account.

Q. Aren't you mistaken in saying that Mr. Sloan used three per cent in this case? Wasn't it Mr. Williams who did it? I notice the same statement in your testimony in chief.

A. If it was Mr. Williams and not Mr. Sloan, I stand corrected, but in my notes I have a memorandum that it was Mr. Sloan who testified to that effect.

Q. Perhaps they both used it?

Mr. Postle: They did.

Q. But I think that you drew a distinction between Mr. Sloan's and Mr. Williams' treatment of the subject, if I remember the record. It is not material, however.

A. There is practically no difference between the two. Mr. Williams used for right of way $1,940,000.00 and Mr. Sloan $1,923,000.00. The difference is only $17,000.00, or less than one per cent.

Q. Isn't it true that in the recent so-called West Virginia [fol. 3640] case and in both the Baltimore and Virginia cases you evaluated the right of way of The Chesapeake & Potomac Company, another Bell System Company, on the basis of a given amount per pole, plus a given amount per trench foot of conduit and a given amount per foot of block cable?

A. Yes, I did, but the conditions were quite different there. Mr. Sloan had also used a different method, and his results were very much higher than mine. The type of construction and the topography of the country made a different handling of the subject necessary, which we both recognized.

Q. The use of the per pole method would have caused you to arrive at a higher valuation for the right of way of The Ohio Bell Telephone Company than the three per cent method used, would it not?

A. If I had used the same unit per pole, but I am unable to say that that method would be fair in this case. I think the right of way in a State like Ohio would be less per pole than in a rough, mountainous and undeveloped State like West Virginia and parts of Maryland. The lines there frequently leave the highway and make direct cuts through the country and involve considerable expense in clearing ground containing private right of way and trimming trees.

Q. With respect to the item of buildings, I understand

that, from your examination and investigation, referred to at pages 2081 and 2082 of the record, and extending over a period of four months, you reached a conclusion that the reproduction cost new of the Company's buildings, as shown in Myer's Exhibit No. 3, fairly represent that cost as of [fol. 3641] June 30th, 1925; that is correct, is it not?

A. Yes, as an average for the entire account.

Q. Was that conclusion borne out by the judgment of the architects and contractors to whom the Company's building plans and specifications were submitted for their estimate of the reproduction cost new as of that date? You mentioned something of that in your testimony in chief.

A. Not always in the first instance. It was necessary to make explanations calling attention to the special features of a telephone building, which differ from commercial buildings, such as stores and warehouses. Where these circumstances were explained the unit costs were generally approved.

Q. I recall that now.

A. That was due to the fact that the average local contractor would think of checking the value of a two story or three story building by the application of unit costs per cubic foot of space. Where he is accustomed to deal with more lightly built structures his unit costs would be somewhat less than the cost of constructing telephone buildings where more steel and concrete is used than in the ordinary building having the same over-all dimensions, but used for store purposes.

Q. In appraising the item of central office telephone equipment, referred to at pages 2082 and 2083 of the record, and also page 2084, I understood you to say that you satisfied yourself from your check of the costs of the Western Electric Company and other manufacturers that the reproduction cost new of the Company's central office equipment as [fol. 3642] shown in your Exhibit No. 2 fairly represents that cost as of June 30th, 1925?

A. Yes.

Q. Also with respect to the item of other equipment of central offices, the difference between your reproduction cost new and that shown in the Company's appraisal is slight and, as I understand it, due to your judgment that the difference is accounted for by assuming purchases in larger volumes than Mr. Williams appears to have had in mind?

A. I think that is the explanation.

Q. A reference to that is at page 2084 to 2086 of the record.

(No reply.)

Mr. Burr: Counsel will understand that in making these constant references to the record I am trying to do it for the sake of convenience later on.

Mr. McConnaughey: I understand.

Mr. Burr: Both theirs and ours.

Mr. McConnaughey: It is a fine habit.

Q. Now when you come to the item of station apparatus, you refer to labor costs as constituting a part of the unit prices or costs used by you in completing that item, and I refer to page 2086 of the record; isn't it a fact, Mr. Hagenah, that there is no item of labor in the account "Station Apparatus"?

A. Well, I haven't the specification before me. I don't recall just what items are charged to that account.

Q. And don't you know that the difference between your appraisal and Mr. Williams' appraisal of that item must [fol. 3643] be due to a difference in labor costs?

A. Well, I assume that is true. I haven't a copy of the official classification here. Of course the large amount of labor related to stations was in the succeeding or following account "Station Installations". At the present time I am unable to say what is the explanation for that difference.

Q. Didn't you have station installations in mind when you made that statement with respect to station apparatus?

A. Apparently I did. The difference is more likely to be in the miscellaneous material than it is in labor.

And thereupon a recess was taken until 1:30 o'clock P. M. of the same day, Tuesday, February 15th, 1927.

[fol. 3644] Afternoon Session

Tuesday, February 15th, 1927.

And also WILLIAM J. HAGENAH, resuming the stand for further cross-examination, having been heretofore duly sworn, testified as follows:

Cross-examined by Mr. Burr:

Q. Immediately preceding the noon recess, Mr. Hagenah, we had been discussing the item of station apparatus;

calling your attention next to that of station installations, please tell the Commission how you arrived at the unit cost of $3.90 per station referred to in the record at page 2086. To be a little more specific does it include the cost of material for the inside wiring and protector; does it include the labor of installing the instrument, protector and miscellaneous apparatus such as buzzers, loud ringing bells, etc.?

A. It does. The direct labor to install is placed at $3.00; the supply expense is six percent; the miscellaneous material consists of wire, staples, screws, tubes, tape and protectors. The labor is at the rate of 67½ cents per hour and includes provision for a Ford truck; two percent is allowed for tool expense, and 17 percent for supervision.

Q. Does it include the material cost of the protector?

A. Yes.

[fol. 3645] Q. What does that amount to, if you please?

A. A part of the 85 cent item; I have not detailed the individual items in the average installation.

Q. That is sufficient. Do you know wherein your unit cost for the station installations differs from that applied by the Company in its appraisal?

A. I do not know positively but I think it is a matter of difference in classification. You will note from referring to my Exhibit 3 that my cost for station installations is about $130,000.00 lower than Mr. Williams' appraisal for the same item. I am, however, $170,000.00 higher than Mr. Williams on station apparatus. There is very little difference when the two accounts are taken together, so I judge that the discrepancy in either case is due to a matter of classification.

Q. With respect to the item of private branch exchanges, was the reproduction cost new referred to at page 2087 of the record arrived at by you after checking costs of The Western Electric Company and other manufacturers?

A. Yes.

Q. Of standard private branch exchange equipment?

A. Yes; that matter was taken up directly with The Western Electric Company of Chicago. Notations were received. A number of inquiries were directed to the Company at different times and we accepted the data contained in the Company's appraisal after verifying the items.

Q. So that the amount shown in your appraisal for that item represents your judgment of the cost to reproduce new

that part of the Company's property as of June 30th, 1925?
[fol. 3646] A. Yes.

Q. With respect to booths and special fittings, was your evaluation—the record references being pages 2087 and 2088—arrived at by the application of Western Electric Company and other standard telephone equipment costs?

A. Yes. One was checked against the other to verify the units contained in the Company's appraisal.

Q. And you came to the conclusion that the Company's appraisal figure for that item was correct?

A. Yes.

Q. Let me interject at this point this question, if you please. Returning for a moment to the item of going value, you have testified that the appraisal generally, including the item of working capital, would have to be increased except for The Western Electric Company and the License Contracts; would not the same be true of the item of going concern value?

A. Yes, that would follow naturally because the allowance for going concern value is expressed in terms of relationship to the physical items.

Q. And just to the extent that the evaluation of physical items were increased, going value would be proportionately increased?

A. Yes; if the physical items were to be increased, the going value item would be increased in proportion; that is, in proportion to the percentage which I used.

Q. And would not the going value found by you as of June 30th, 1925, have to be increased by reason of the net additions which you have found to have been made to the [fol. 3647] property between that date and December 31st, 1926?

A. Whatever my final valuation figure would be, I would express the going value in terms of ten percent on the physical items as of that date, so that if I were determining the value of the property at a date later than the original inventory date, I would adjust my allowance for going concern value just as I would increase the reproduction cost of the physical items by adding the additions subsequent to the date of the inventory, if there had been no change in the price level in the mean time.

Q. You would adhere to the ten percent, but would ap-

ply it on the reproduction cost new of the property as of the date to which your valuation had been brought?

A. Yes; that is, the final date that the Commission or Court decided upon in determining the rate base for the instant inquiry.

Q. Returning to the physical property covered by your appraisal, isn't it true that the difference between your reproduction cost new and that of the Company in respect to exchange pole lines is due to the application by you of labor and supervision costs which are less than those used by Messrs. Williams or Sloan?

A. Yes; that is practically the only difference. On material prices we are substantially the same.

Q. The record reference is page 2088. As I understand you, you are in substantial agreement with Messrs. Williams and Sloan in respect of exchange pole line material costs?

A. Yes.

[fol. 3648] Q. On page 2089, line 3, if you will be good enough to look at the record, please tell the Commission whether the word "small" should not be "large"?

A. No, I think that is the word I intended to use.

Q. Very well; now what then do you mean by the word "small"? That is, small in contradistinction to what?

A. In relation to the total number of estimates——

Q. Used by whom?

A. In which the property costs for these different classes were represented on the Company's books over the period when the price level was substantially that which obtained in the summer of 1925.

Q. At page 2089 you testified as follows: "The allowance for labor contained in my appraisal for these units checked almost exactly with the average computed from the Company's work orders and these studies are confined to the largest jobs which more nearly approximate reproduction conditions." Do you find that in the record?

A. Yes.

Q. Also you testified: "The unit costs compiled directly from the Company's reports are the averages of all costs compiled from a comparatively small number of estimates in which the amount of work performed ranges from a very few poles to over one thousand poles, and in each case there has been charged against the estimate all the labor and inci-

dental labor expense due to such a detached undertaking, beginning with the preparation of the estimates and going from the storehouse to the work and back again." Do you find that in the record?

A. Yes.

[fol. 3649] Q. Do you mean to be understood by that as saying or believing that the unit costs for exchange pole lines used by Mr. Williams in his appraisal were arrived at by using the average of all exchange pole line costs of the Company including both large and small estimates?

A. No; I do not think he did exactly that. I believe he did examine all the estimates of the Company and then based his unit costs on a selected number of them. What relationship that number bore to the total I do not remember now, but as a matter of record the estimates finally relied upon were read in the record and were not a very large number.

Q. Don't you know that in computing his unit costs for this class of plant Mr. Williams eliminated from his calculations many estimates, each involving a small amount of construction or reflecting abnormal labor costs?

A. He testified I think that he eliminated some such items.

Q. If he eliminated estimates involving as much as $4,700,000.00, that is to say construction estimates, what would you say as to whether or not the estimates which he had retained and which he had used as the basis for his unit costs were fairly representative of the costs for that kind of labor, Mr. Hagenah, on the reproduction basis?

A. I cannot answer that question directly without stating that the difference between Mr. Williams and myself in the matter of these unit costs is more one of principle than one of number of estimates used. I am not saying that he has not computed it as thoroughly and with as much accuracy [fol. 3650] as any one could who decided to follow the method which he adopted.

The confusion which I see in that system, and which detracts from its greatest worth for appraisal purposes, is that these estimates contain not only construction work but a great deal of reconstruction and a certain amount of maintenance, and the accuracy of the results depends largely upon the accuracy with which the men in the field at the time the construction and reconstruction work was be-

ing carried on apportioned the time and labor charges. Some of these estimates contain a very involved and complicated construction and reconstruction program, and it is because of this fact that I have not used the work orders or estimates of the Company but set up the independent construction organization.

Q. I will come to that part of it in just a moment. What do you mean by the term "largest jobs"? I think you employed that at page 2089 of the record in the next to the last paragraph on that page?

A. The term "large job" and "largest" is necessarily relative. I am not able to say, without having the details of those individual jobs, where the line of separation between a small and large and larger or largest should come. I think one could readily say, from an array of all the estimates, that the largest jobs were clearly outstanding. The same difficulty, however, is present in the very large jobs as well as in some smaller jobs because there is the confusion between construction, reconstruction and ordinary [fol. 3651] maintenance work. The condition is unavoidable in a large company of this character, and there is nothing to criticize, but it does raise the question how accurately one can determine unit costs for construction purposes from undertakings where accounts may not have been kept with a view to setting aside all items relating to construction and those pertaining to operation.

Q. Well, I am going to ask you about that alleged confusion in just a moment, but in the meantime will you tell me this, if you please. After computing your labor costs or labor allowance for exchange pole lines, did you find that they were in substantial agreement with the average of the labor costs shown in the larger construction jobs of the Company?

A. My recollection is that that is substantially true for all the classes of property. There are considerable variations in different accounts; some are higher and some are lower. When, however, they are all added together, there is no great variation.

Q. And to what extent did you reduce the labor costs shown by the specific estimates which you examined in order to arrive at your labor costs for this class of plant; that is to say, for exchange pole lines?

A. I can not answer that question because we did not build up our unit costs that way. We analyzed the bases which Mr. Williams had used and examined the material which he had compiled. Our unit costs are not based on the estimates of the Company, but, because of the confusion which was present and the wide variation in unit costs [fol. 3652] in the different estimates, we set up our own gang with the performances to be expected of such an organization on large scale construction work. The results, for that reason, are not strictly comparable, because they proceed from different bases.

Q. Having set up your unit costs by your own method, what comparison if any did you make between the unit costs so arrived at and those evaluated by Mr. Williams from the Company's actual experience?

A. No extended comparison was made except as to the results for the various items of property in place. We did feel confident, however, of the accuracy of our units expressed in terms of performance per man hour or per man day or in terms of work performed; as, for example, poles set and quantity of earth removed; that comparison could be fairly easily made where we were dealing with the same class of property. For example, in underground conduit construction, since we are using approximately the same unit costs of material, the variation in the final units used in the two different reports is confined to variations in labor costs. When we reduce the work performed by the different gangs I think the results under the units which I used commend their adoption.

Q. Doesn't it all come to this then, that Mr. Williams' units for this class of property fairly reflect the Company's experience, whereas you have adopted lower units because you do not believe that the Company's experience should be the criterion upon which to evaluate this class of the Company's property?

[fol. 3653] A. That is partly correct, but I think one should go a little further in correctly stating the difference between the two reports. If the Company were engaged during 1925, or one or two years preceding that time, in construction undertakings which approximate in their characteristics reproduction itself, then I would have used the Company's experience. But that was not true. The charges to property and plant account for the different

outside accounts were made up of a large number of different construction undertakings, and the average or any unit cost computed from a number of estimates which contained both construction, reconstruction and maintenance did not approximate reproduction conditions.

Q. At page 2089 of the record you say this: "The unit costs compiled directly from the Company's reports are the averages of all costs compiled from a comparatively small number of estimates in which the amount of work performed ranges from a very few poles to over one thousand poles, and in each case there has been charged against the estimate all the labor and incidental labor expenses due to such a detached undertaking, beginning with the preparation of the estimates and going from the storehouse and back again." By "incidental labor" do you mean the preparation of the estimates and all other incidental labor expense such as going to and from the job?

A. Yes; the accounts of your Company show a very substantial overhead charge that is added through the distribution of your accounts to the direct labor and material, and the construction work is charged with the time of the gangs [fol. 3654] in going to and from the construction work.

Q. And that, with the preparation of the estimates and all of the other incidental labor expense, includes what you cover by the term "incidental labor"?

A. Yes; I mean by incidental labor, taking the term from your own books, the way in which you distribute the accounts in actual operation; you have a certain amount of engineering expense which finds its way into each construction job; a percentage of supervision expense; administrative expense and tool expense. In the aggregate these are quite large in terms of percentage of the work accomplished and when the units are built up from these estimates there is already included in them certain parts of the costs which is later covered by the general overhead charges.

That is another reason why I think these units must be analyzed and accepted with considerable discrimination.

Q. Who prepares the estimates, if you know?

A. Well, I cannot say who the individuals are; they are part of the organization.

Q. Are they prepared by the plant superintendents and the plant engineers?

A. I believe so. I think your accounts indicate there is a transfer for service of that character.

Q. Don't all of the costs for the estimates, both routine and specific, find their way ultimately into the plant supervision charges?

A. I think so.

Q. And haven't both you and Mr. Williams, in the prep-
[fol. 3655] aration of your respective units, computed and applied this plant supervision expense in direct proportion to—that is, as a stated percentage of labor cost?

A. We have both made an allowance for plant supervision.

Q. And haven't you done it that way?

A. It has been determined from the Company's books.

Q. And hasn't it been applied as a stated percentage?

A. Yes; applied to the labor, and the supply expense has been added to the material cost.

Q. And in your compilation of the unit costs that percentage is the same, whether the job be large or small, is it not?

A. If you take the average over a large period in arriving at your unit, that would be true.

Q. I am asking you, of course, about the compilation of the unit costs used in this case?

A. Yes.

Q. Isn't it true that in the compilation of the unit costs that percentage is the same whether the job be large or small?

A. Yes.

Q. And that being so, isn't it true that in developing the unit costs the part of the plant supervision represented by the cost of preparing the estimate included for any job, large or small, varies in proportion to the amount of labor represented by each particular job?

A. Yes.

Q. And therefore the plant supervision cost for a small job would be less than the cost for a large job in the same proportion as the total labor for the small job is less than the total labor for the large job?

[fol. 3656] A. That is true as to the amount of dollars, but the percentage relationshop is the same.

Q. The percentage relation is the same?

A. Yes.

Q. In other words, in developing unit costs by averaging the preparation of the estimate cost and applying it to labor on a percentage basis, reproduction on what you have termed the piecemeal basis would be no more costly than on a wholesale basis insofar as that item is concerned, would it?

A. That is correct as to plant supervision and also as to storage expense and tool expense, etc., from the variations in the tool expense of different accounts, but in general that holds true.

Q. With respect to going from the storehouse to the work and back again in the case of exchange construction, isn't it true that the construction gang must make at least one trip to and from the job per day?

A. Yes, at least one.

Q. And that is true whether the job would represent what you term piecemeal or wholesale construction?

A. Yes; but if the job is small the same gang might handle two or three jobs in one day, and the amount of distributed labor would be relatively higher on the small jobs than it would be on the large jobs.

Q. Yes, but in any event the gang makes at least one trip to and from the job a day, doesn't it?

A. That is right.

Q. It may make more, but it at least makes one, doesn't it?

A. Yes.

[fol. 3657] Q. One is the minimum?

(No reply.)

Q. Do you know whether Mr. Williams in the compilation of his unit costs used any jobs involving more than one trip to and from the work a day?

A. No, I do not.

Q. Don't you know that none of the estimates used by Mr. Williams required more than one trip to and from the job?

A. I do not know that.

Q. If he did his costs for the labor of going to and from the job would be as low as could be developed even on the wholesale construction theory, would they not?

A. If that were true, the conclusion would follow. There is, however, present in the bases which he used not only construction but considerable maintenance work and reconstruction, and I do not know what amount of traveling back and forth or accounting for material and labor of that kind would be present and affect his cost.

Q. We are still coming to that; I have not quite reached it yet. Isn't it also true that in the case of exchange pole line construction the time of the men, except that of the truck drivers and loaders, begins to run from the time they report on the job and not at the time they start for it?

A. I do not know; I could not answer that.

Q. And you do not know whether the time ends at the job or after they have returned to the storehouse?

A. Why, I assume the time is charged until they return from the construction job; if it is not charged directly there is a certain amount of unproductive labor which must be distributed. That is necessary under any accounting [fol. 3658] method; there is unproductive labor which must be charged to construction, as well as to operation.

Mr. McConnaughey: That would apply to going to the job as well as coming back, wouldn't it?

The Witness: Oh, yes, that is true in every department of work.

By Mr. Burr:

Q. With respect to toll line construction, wouldn't the situation with respect to the one job, a day basis be the same as in the matter of exchange pole line construction; that is to say, if Mr. Williams used no estimates that included more than one trip to and from the work a day, insofar as that item is concerned, his unit costs would be the same whether they were based on wholesale or piecemeal construction?

A. That would follow, yes.

Q. With respect to loading the trucks prior to starting out on each job, are not the tools always left in the truck such that each morning the truck is already loaded and ready to go when the men report for work?

A. Yes; the regular system is to have trucks that are wonderfully equipped with a certain amount of construction material and tools to meet all the requirements that are ordinarily encountered in a day's work; better equipped than the ordinary fire truck is for that purpose. But it is neces-

sary to equip your truck for the kind of work that you are doing, and if you are doing construction work only you can better provide yourself with the tools and facilities than if you have maintenance work and reconstruction work in-
[fol. 3659] volving the handling of old material and taking down material and replacing it and changing its position. These necessarily do complicate the work of a construction organization. The actual time spent in loading and unloading the truck and going back and forth is relatively small. It narrows down to a larger basis than that and cannot be determined exactly in fractions of hours or minutes or performances of individual men; it narrows down to the simple proposition of whether a construction organization laid out under the broad and very comprehensive and very efficient methods of The American Telephone & Telegraph Company can accomplish better results on a large construction undertaking than they can in terms of units accomplished when they must deal with a large number of detached and separate construction undertakings, many of which involve taking down old material, changing its position and replacing it with others.

Q. On that subject, and which is, as I understand it, that you criticise some of the unit costs, or criticise the unit costs in part, employed by Messrs. Sloan and Williams in this case because some of the estimates used by them in developing their unit costs included not only new construction, but also displacements and rearrangements of plant, where, in Ohio, have you lately observed any telephone plant in process of construction, displacement or rearrangement?

A. I have not observed any of late. I had no occasion to look for it. That is not where I would get the information any way. If I were dealing with the specific performance I would confine myself to the work reflected in these per-
[fol. 3660] formances and not going about looking for the work performed by gangs in the field at a particular time.

Q. I am now directing your attention more particularly to this alleged confusion which you say exists or may exist in keeping the time of the men as between construction, displacement and reconstruction. Now you do not know then, as I understand it, whether the displacement or reconstruction progresses side by side with the new construction or whether the same men work at both kinds of work interchangeably and approximately the same time; you do not know what the fact is with respect to that?

A. No, I cannot say definitely, but I do know that I have seen plenty of evidence of that; in taking the completion reports or estimates and dividing the amount of labor distributed to the placing of poles by the number of poles, you get extremely wide variations between different jobs, in some instances the variation being as much as 150 per cent. That is not surprising and I do not know how the accounts could be more accurately kept because the men cannot report their time with the degree of refinement that such a cost analysis for unit cost purposes would require. If they spent their time on that refinement of accounting, they would lose so much productive effort that the question would arise whether they were operating for the benefit of the accounting department or for the benefit of the construction department. The confusion arises, however, when these results which are present in the field and which are unavoidable are, however, made the basis for setting [fol. 3661] up unit costs for appraisal purposes. It is only then that difficulty arises and the reasonableness of the results can be questioned. The total dollars charged against construction are not open to criticism, nor the amount assigned to maintenance or reconstruction. But when a part of the estimate is used and unit costs are based on that alone, wide discrepancies are present, so wide as to suggest that extraordinary conditions were encountered. If the unit cost of setting poles in one job is double the cost in another job, something is wrong in one of those undertakings for the purpose of building up unit cost data for appraisal purposes. Both may be quite right as costs of the job in question.

Q. And might they not both be costs which would be actually encountered in case you were reproducing the property?

A. Quite right, but is it fair to take unit costs determined from a few thousand or even ten thousand or twenty-five thousand poles of that character and build up a unit to apply for half a million poles, of which possibly 85 per cent are set under conditions widely different from those reflected in the estimates from which the unit cost was compiled?

Q. Well, in compiling your unit costs would you not take into consideration at all the poles which cost in place 150 per cent of the cost of some other pole in place?

A. Yes; they are a proper matter to be considered and they are reflected in our unit costs. They are also reflected

in the item of omissions and contingencies in the overhead charges; I have endeavored to cover that very cost, and be- [fol. 3662] lieve I have, to the extent that it can be allowed for.

Here is an example of what I mean; in the conduit construction Mr. Williams used a depth of cover, as I recall it, of about 2½ feet over the top of the duct, and I have accepted that as being accurate; that is, it is as nearly accurate as we can get when we must deal with averages for a property as large as this is. Yet we do know that there are places in Ohio, quite a number of them, where the conduit is at a depth of 15 feet. Now, obviously, using a cover of 2½ feet for an average is doing violence to instances where the conduit is laid at a much greater depth and is laid in very complicated construction because of underground facilities of other public utilities. The only question is whether in the unit costs that we have used as the average we have given due effect and made proper allowances for the extraordinary conditions which we know are present in part. We are dealing with the same state of facts. It is merely a question whether we have made proper allowance for that in the unit costs to cover the extraordinary situations.

Now I think that in using the work orders as Mr. Williams used them he has given undue stress to the extraordinary conditions which make construction expensive.

Q. Why do you say that?

A. Because the unit costs which he reaches when the material cost is eliminated leaves a unit cost for the labor that is very high in terms of the work performed.

Q. Well, what do you mean by "very high"? Those terms, of course, are relative?

A. They are relative. Take this example; we know that [fol. 3663] a man in ordinary digging operations in the streets is supposed, under certain soil conditions, to handle a given amount of earth. A contractor figures on that average performance in bidding on any job. He then protects himself by a percentage to cover conditions which he thinks are inherent in work of that kind but the extent of which he cannot anticipate. So in all bids of that character, just like in the appraisal, we set aside certain items of overhead expense, and no one questions their propriety. When, however, we find that the unit costs which one man uses involve a cost per cubic yard of dirt moved of from

two to three times that which a contractor ordinarily figures on, we believe that that cost is too high. It may be a correct unit cost for an individual job, but it is not a correct unit to use as an average.

We have checked out a good many of these unit costs. It is a subject to which we have given a good deal of thought. I have been somewhat disturbed by the wide variation in some of the unit costs, especially when we were dealing with substantially the same costs for material. But I think I can show that when we are talking about the remaining cost of the unit after material is excluded and find a variation of from 100 to 200 per cent, then there is something more than a mere difference in minds dealing with the same state of facts.

Q. Well, now, of course in making these comparisons you must have used something as the basis of your unit costs?

A. Oh, yes, I have.

[fol. 3664] Q. Will you be good enough to tell us where you start or where you have started in this case to build up your unit costs? What is the basis of them, what experience, what figures, what facts, you have on which your unit costs for this class of property are based, especially with regard to the labor performance?

A. The labor performance which I have used as the basis of the unit costs in my appraisal is the performance which is present in the construction of such property to which the units relate. In the experience of a large number of public utilities——

Q. That is in the State of Ohio, may I ask?

A. Yes, in the State of Ohio, and in other States where conditions are substantially the same. It does not cost much more for a man to throw a cubic yard of dirt in the streets of Columbus, Ohio, than it does to throw a cubic yard of dirt in the streets of Indianapolis or St. Louis if we are in each case using the same wage scale.

There are some cities which have a great deal of rock. The cost of throwing out a cubic yard of excavation in the streets of Duluth is a very difficult process and often requires blasting. The cost of throwing out a cubic yard of dirt in streets which represent a fill or of sand and gravel is going to be much less.

Now I am not comparing Duluth granite and rock excavation with sand excavation in any other city. I am trying to be fair and compare like conditions. But I can see no justi-

fication for the use of a labor unit for the State of Ohio which is at least twice as high as that which other companies [fol. 3665] show by their records to have actually occurred, and some of them large telephone companies.

By way of illustration, the unit costs of removing earth in conduit construction as used by Mr. Williams as his average for the entire State of Ohio exceeds the cost of laying conduit in the Loop District of Chicago.

There are conditions of construction in the streets of Cleveland and in Columbus and in Toledo which approximate conditions present is large cities like Chicago; but there are no conditions for the average of the State of Ohio which would lead to unit costs as high or higher than the cost of laying conduit in the streets of Chicago.

Now as just one illustration,—and I can give more—I have built up the same kind of an organization that a contractor uses. Most of your conduit is built by a contractor and is not built by the Company. The unit costs which contractors find as a result of construction jobs of this character—not a single one, but dozens of them—are substantially less than the cost which Mr. Williams used. What I assume is the cause of this discrepancy is that Mr. Williams has taken a number of actual construction jobs in the large cities where possibly extraordinary conditions were present, and in no account are they present to the extent that they are in underground construction, where you would encounter sewers, or where you would encounter gas mains, or where you would encounter other underground construction; sometimes you go around it and sometimes you go through it and sometimes you have to remove it and then [fol. 3666] replace it; it makes the unit costs high; wide variations result; but the average which Mr. Williams has used for the State of Ohio is too high.

The same is true in a large measure in respect to the cost of setting poles.

Q. Don't you know that 67 per cent of the jobs used by Mr. Williams in compiling his labor units for conduit were derived by him from the actual costs as shown in contract jobs?

A. I do not know what the percentage is but the result which he reaches is far out of line with the experience of any company anywhere that I have ever seen.

Q. Well, how much experience have you had with that sort of thing in Ohio?

A. I have not laid any conduit but I have checked the construction costs of many millions of dollars of conduit for telephone and electric light companies in Ohio and in adjoining States.

The same condition is true with respect to poles.

Q. Now don't you know——

A. No electric light company shows costs of setting poles as high as those which Mr. Williams shows here, and there is no difference between a 45 foot pole set in place by an electric company and that set in place by a telephone company. It gets back again to the use of the estimates or completion reports as the basis for building up the unit costs.

Q. When you speak of the pole costs of electric companies in Ohio, can you tell us, if you please, the names of one or two companies to which you have reference?

A. I have appraised the electric properties of The Cleve-
[fol. 3667] land Electric Illuminating Company.

Q. At what time?

A. That was in 1911 the first time, and I was consulting engineer for the company when the property was reappraised in about 1916.

Q. The last one then was eleven years old in respect to The Cleveland Electric Illuminating Company?

A. Yes, and I note whether construction conditions have changed and I can express the units in terms of the changes in wage scales.

I have appraised the Electric Street Railway & Power Transmission System in Akron; the electric properties in Springfield, Ohio.

Q. When was that, please?

A. About 1919, I believe.

Q. And Springfield when?

A. And Springfield in 1922 or 1923. And I am now appraising the electric properties in the City of Cincinnati.

Q. In your investigation of the Company's conduit costs didn't you find that the Company's costs for doing this kind of work were lower than contractors' costs for doing the same kind of work for the Company?

A. I am unable to answer that.

Q. You did not find that to be true?

A. I did not check that particular fact; I cannot say.

Q. Now going back to the division of labor as between construction, displacement and rearrangement, don't you know that in the case of The Ohio Bell Telephone Company

these divisions of work are handled by separate gangs or by [fol. 3668] separate men of the same gang working first at one kind of work and subsequently at another, but never at the same time?

A. Oh, I assume that to be the fact.

Q. And don't you know that for that reason the part of their time referable to construction and that to reconstruction and displacement is readily ascertainable, and that no allocation or estimate of their time as between construction on the one hand and displacement or rearrangement on the other is necessary?

A. Well, the segregation is not made in the Company's office. I do not mean to imply that. The time is kept by the men in the field and I am not criticising or saying that it can be done any better. The work is such that if you spent any more time to get accounting refinements it would involve a greater expense than the results obtained would be worth.

It is only when you use them for appraisal work that I question their application.

Q. Well,——

A. This much is true, that after the segregation has been made to the best advantage of the Company, not for appraisal purposes, you remember, but for the purposes of the job in hand, when we then divide the work in terms of labor expense by the units accomplished, we get extreme variations in unit costs, so much so as to reflect the presence of extraordinary conditions.

If these unit costs had been kept in the field with a view to making them apply to appraisal purposes the distribution would have been different because they would have to spend more money to make a more careful segregation.

[fol. 3669] Q. But don't you know, Mr. Hagenah, that no allocation or estimate of the time as between construction on the one hand and displacement and rearrangement on the other is necessary by the men in the field?

A. It is not necessary if the men are assigned to one undertaking and give their entire time to that, but when they are through with that, whatever method of segregation or allocation of labor has been made, the results in terms of unit costs of work performed show this extreme variation, which is not present where a large construction work is carried on. The accounting is different, the work is different, and naturally the results reflect the conditions which

are present. The difficulty arises when results and accounting process developed in one class of work, and which are perfectly proper for that class of work, are made the basis for a wholly different use.

Q. With respect to your appraisal of the central office equipment, for which you say you have accepted Mr. Williams' figures, for testing them by the costs of The Western Electric Company and other manufacturers, do you recall Mr. Williams' testimony subsequent to his appraisal testimony with respect to the accidental omission from his appraisal of central office equipment totalling more than $300,000.00; he was referring to the equipment located in Building No. 4 of Cleveland, which is the Main and Cherry central office building; do you recall that testimony?

A. No, I do not. I am not questioning it. I simply do not [fol. 3670] remember it.

Q. Well, if that was omitted by Mr. Williams and is not shown in the appraisal, ought not that amount to be added to your appraised value of the central office equipment?

A. If it is an actual omission, yes.

Q. Well,——

A. I would accept his statement for that. We could not possibly check over all the computations for a property of this magnitude. If Mr. Williams says he made a mistake, why, we will put it in.

Q. Well, I am not questioning at all your failure to check it; I am merely asking you whether, if the omission was made by Mr. Williams as he says, it ought to be taken care of in your appraisal?

Mr. McConnaughey: Mr. Williams took care of it by noting it in his testimony of omissions, didn't he?

Mr. Burr: No, he did not. You are mistaken about that. The point I have here is that, subsequent to Mr. Williams' original appraisal, he found this item in excess of $300,000.00 for central office equipment which had been omitted from his appraisal. Now Mr. Hagenah accepted Mr. Williams' original figures, and I am now asking him whether, if Mr. Williams made that error, there ought not to be an addition to Mr. Hagenah's appraisal corresponding with that $300,000.00 item which was omitted. Now I understand Mr. Hagenah to say that if it was omitted, allowance should be made for it.

The Witness: Mr. Dorsey tells me he has checked that

and that the omission was made and that we will add it to [fol. 3671] our appraisal report. The checking which we made of central office equipment was the checking of the Western Electric charge and the installation charges. We did not check the unit costs in their application to each central office installation.

Q. That was my understanding. Mr. Williams also testified to the following accidental omissions:

Account 261, office furniture and fixtures, $48,160.00;

General stable and garage equipment, account 264, $81,322.87;

Account 265, General tools and implements, $37,686.78;

General Store equipment, Account 264, $626.42. At pages 2095 and 2096 of the record you accepted Mr. Williams' appraisal figures for those four classes of plant after having tested their correctness as referred to in your testimony. Can you tell me whether or not Mr. Dorsey or you have made a check to determine whether or not Mr. Williams is correct in his testimony with respect to those omissions?

A. We have made no check of it. If they are omissions from the inventory they should be included in the appraisal, because the overhead item which I have included in my appraisal and entitled "Contingencies, casualties and omissions" is not intended to cover items of that character in the inventory. I proceeded on the assumption that the inventory was correct. If these items have been omitted, then the inventory would have to be corrected. The item [fol. 3672] of overhead charges to which I have referred relates more to the matter of contingencies, casualties and omissions in building up and applying the unit costs. They are cost omissions and not inventory omissions, and deal with just such matters as I referred to in the case of labor and material prices in the unit costs.

Mr. Burr: I will ask Mr. Williams where he sits whether or not these omissions which I have enumerated were not, as an actual fact, made in his inventory, and whether or not property to that amount ought not to have been included in his inventory under the specific accounts named?

Mr. Williams: That is the fact.

Q. Mr. Hagenah, in respect of overheads, I call your attention first to the amounts testified to by you as the value of engineering necessary to reproduce the property

of The Ohio Bell Telephone Company as of June 30th, 1925. I understand that that amount is in your judgment, the sum of $5,762,755.00?

A. Yes.

Q. Now with respect to that item and of the other overhead items, is it not true that as to any corrections made in your appraisal as the result of the omissions referred to by Mr. Williams, or for any other reason, and with respect to net additions since June 30th, 1925, the overheads must be increased accordingly?

A. They must be increased to cover the errors or omissions that were present in the inventory on which my appraisal is based. I am not ready to say, however, that they should be applied also to the net additions to the property, [fol. 3673] because those have been built up under the practice of the Company and do contain a certain amount of overhead charge.

Q. Now the Uniform System of Accounts for telephone companies, prescribed by The Interstate Commerce Commission and adopted by The Public Utilities Commission of Ohio, provides, does it not, for the item of engineering as a fixed capital charge?

A. Yes.

Q. That is Account 271, "Engineering and superintendence", is it not?

A. Yes.

Q. And of course the property could not be produced without such engineering, could it?

A. It could not.

Q. Referring next to the amount testified to by you as the value of the administration and legal services and taxes during construction necessary to reproduce the property of the Company as of June 30th, 1925; your judgment of that amount, as I understand it, is $1,680,804.00?

A. Yes.

Q. Now the same system of accounting provides specifically for—that item is likewise a fixed capital charge, is it not?

A. Yes; the language is somewhat different from what I have used but the substance is the same and the charge is provided for and must be charged to capital during construction.

Q. And naturally the property could not be produced without such cost?

A. That is right.

Q. Administration expense in the system of accounting heretofore referred to appears under Account 274, "Miscellaneous construction expenditures", which are also fixed [fol. 3674] capital charges, are they not?

A. Yes, sir.

Q. And legal expense during construction appears as a fixed capital charge in Account No. 272, "Law expenditures during construction", does it not?

A. Yes.

Q. Taxes during construction appear as a fixed capital charge, Account 273, "Taxes during construction"?

A. Yes.

Q. As I understand you, all of these expenses, including engineering, administrative and legal expense and taxes during construction, would have to be incurred in the amounts stated by you in the reproduction of the property as of June 30th, 1925?

A. Yes.

Q. Now with respect to the item "Injuries, damages and insurance during construction", testified to by you as necessary in reproducing the property of the Company as of that date, you have evaluated those costs in the sum of $480,230.00, which I understand to be your judgment as to what those costs would be in the event of the reproduction of the property; is that correct?

A. Yes, that is what those costs generally run, in constructing property of this size and character.

Q. Now the system of accounts heretofore referred to provides for those items as fixed capital charges in Account 274, "Miscellaneous construction expenditures", does it not?

A. Yes.

Q. And I assume it to be your judgment that the property could not be produced without experiencing those costs also?

A. That is true.

[fol. 3675] Q. Now with respect to the item of contingencies, casualties and omissions, for which you made an allowance of $2,401,148.00, am I correct in understanding it to be your judgment that in appraising a property of the size of The Ohio Bell Telephone Company as of June 30th, 1925, an allowance should be made, (a) for the casualties unavoidably occurring in the construction or reproduction

of a property of that character; and (b) for unforseen casualties or contingencies not apparent from an inspection of the completed property but which would nonetheless be encountered in its construction or reproduction; and (c) omissions in inventorying the property; am I correct in that?

A. Yes, with this addition, that the item for omissions is not so much related to the inventory as it is to omissions pertaining to extraordinary conditions which cannot be anticipated in an actual construction and which would affect the unit costs. Unit costs for labor and material which are contained in the specific construction cost above contain no provision either directly or indirectly for any of the hazards, contingencies, casualties and extraordinary conditions in construction which I cover by the overhead item.

Q. How do you arrive at that sum of $2,401,148.00?

A. That is based on my judgment and experience in analyzing the actual construction costs of several hundred million dollars of public utility work under conditions similar to those obtaining in Ohio. These contingencies and cas- [fol. 3676] ualties of course do not develop in anything like a uniform percentage. There is a wide difference in individual cost. They grow out of storms, strikes, delays in the delivery of material, caving in of embankments, falling material, conditions encountered in construction such as quicksand, unavoidable foundation conditions or other conditions which cannot be foreseen until construction work begins, and an allowance for the many contingencies in construction which are inherent in all underground work such as the presence of other utility properties, interruption in construction work due to municipal ordinances, occasional requirements for night work, traffic regulations, etc.

And I find from the analysis of many construction undertakings that the average of these costs is about 2½ per cent of the total expenditure for labor and material on a completed job.

Sometimes these can be covered by various forms of insurance, or a contractor or utility building the property carries it itself. I have used the average percentage of 2½ percent. I know instances where it has been considerably larger.

Q. Now with respect to the item of interest during construction, evaluated by you at the sum of $6,242,985.00, I understand that that represents your judgment of the amount of interest during construction necessary to be paid

as a part of the cost to reproduce the property of the Company as of June 30th, 1925; that is correct, isn't it?

A. That is right.

[fol. 3677] Q. Is interest during construction authorized as a fixed capital charge in the system of accounts heretofore mentioned?

A. It is.

Q. It appears under the head of "Interest during construction", Account 268, does it not?

A. Yes.

Q. Will you analyze your amount for interest during construction in such a way as to show the time element, percentage rate, and construction program on which it is based, if you please?

A. I have assumed an interest rate for construction funds of 6½ per cent per year. I have further assumed that the average period that would be required in completing a service performing unit would be two years, and that the interest rate would therefore be applied for one-half of the period of construction to arrive at the average interest charge, which brings me back again to 6½ per cent, and that has been applied to the specific construction cost exclusive of any other items of overhead charges.

Q. In your judgment could the property of the Company as of June 30th, 1925, be reproduced in the period of 24 months or two years?

A. No, it could not. If the entire property were to be reproduced it would probably take several times that length. But I do not assume that the construction work would be started in any one section and then carried right straight through and no part of it being put into operation until the last part was finished.

I assume that a service rendering unit can be completed on an average in two years. That is, in the City of Columbus, The American Telephone & Telegraph Company could, [fol. 3678] from the time it made its preliminary survey, complete a telephone plant for local service in two years; or it could do the same in Cleveland or in other cities. It could complete its toll system connecting these cities in two years.

Q. By what process did you arrive at the item of $480,230.00, shown in your Exhibit No. 3, for injuries, damages

and insurance, and what does it include? Will you be good enough to itemize it fully for us?

A. It includes only the three items which you have mentioned. These embrace injuries to persons, such as accidents, loss of life, damages to the property of individuals, corporations or municipalities, and insurable hazards, such as fire or liability insurance.

I have lumped the three items at a rate of one-half of one per cent of the cost of construction.

Q. Calling your attention next to the item of administrative, legal and taxes, $1,680,804.00, shown in your Exhibit No. 3, how did you arrive at that item and of what does it consist, and how much of it represents, in your judgment, taxes during construction?

A. I have not set it up in a way that would enable me to answer your question. I have taken from the general experience of public utilities going through large construction work the administrative expense which is chargeable to construction. Ordinarily the administrative department begins its service with the beginning of construction, and as the work progresses an increasing percentage of the ad- [fol. 3679] ministrative expense is chargeable to operation and a diminishing percentage is chargeable to construction. The legal expense relates to the cost of securing franchises, incorporation, drawing contracts, approving contracts, and defending the company in all corporate matters, but not defending injury and damage suits, which are covered in the account "Injuries and damages".

There is provision for taxes on the real estate pending the period of construction. This on land is a major factor since the interest and taxes on land represent the largest and the earliest form of overhead charges incurred in construction.

The total allowance is 1¾ per cent of the specific construction cost of the entire property, and reflects the average of general experience of large construction undertakings.

Q. Would there also be taxes on personal property during that period?

A. Yes, to the extent that that is collected. It is not so large a factor as the taxes on land.

Q. Is this amount which you allow sufficient to cover the taxes on personal property as well as on real estate?

A. It is intended to cover it, but of course as soon as the property begins operation it is then chargeable to operation.

Q. If I understand you in one of your previous answers, in your judgment all of the property would be under construction an average period of one year?

[fol. 3680] A. No; an average of two years, but the interest rate would apply for only one year.

Q. An average of two years, but a mean period of one year?

A. Involving the entire capital, yes; but the construction period would have to be two years.

Q. Do you know that the December, 1925, tax payment of The Ohio Bell Telephone Company, plus the June, 1926, tax payment, covering its property as of January 1st, 1925, was in excess of $1,540,000.00?

A. I assume that is true; I have not the exact figures before me, but it is the tax against an operating, going concern, and not a tax on the property in the process of construction.

Q. Do you think it would be less for that reason?

A. I do not know how the tax is levied in this State, whether the tax is on physical property alone or whether earnings are taken into consideration; but it is in fact a tax on operating property in this case.

Q. Well,——

A. I know of no instance where the tax is levied in the same proportion on all parts of the property in process of construction to the extent that they are levied after operations begin. I know of many instances where no tax at all has been collected from utilities in process of construction except the taxes on land.

Q. Don't you know that in Ohio The Ohio Bell Telephone Company is taxed upon its property under construction?

A. I do not know that. I do not want to be understood that these different accounts here are sharply and clearly drawn. I think I have stated in my direct testimony that [fol. 3681] it is the total that governs more than the individual amounts. Each engineer makes such subdivision as he can and best sustain from his own experience. Therefore we find a material variation between the three appraisals in this case although the total is substantially the same. Therefore we may find wide differences in terminology but not in the effect of the effort. I believe my allowance for all items of overhead charges in terms of percentage of the specific cost is slightly higher than that used

by Mr. Williams or Mr. Sloan; a fraction of a per cent indicates that I have covered everything that they have covered, and it is a question whether the terms of one are proper or of another. There is no place in the classification of accounts of an operating property that all the accounts that would be present in overhead expense during construction can be properly distributed.

Q. Now the foregoing items of interest during construction, contingencies, casualties and omissions, injuries, damages, insurance, administrative, legal and taxes, all of which in your judgment would be incurred in the reproduction of the property, constitute all of the overhead or indirect construction expenditures with the exception of the item of engineering, which you have evaluated in your Exhibit No. 3 at $5,762,755.00; that is correct, isn't it?

A. Yes.

Q. How much is it in terms of percentage, if you please?

A. 17¼ per cent of the specific construction costs.

[fol. 3682] Q. I am now referring to the item of engineering?

A. Six per cent.

Q. With respect to the License Contract payment of $1,274,052.29 paid by the Ohio Bell Company to the American Company for the year ending June 30th, 1925, it is my understanding that you have credited $419,041.29 of that amount to subscribers revenue; that is to say, you have increased the Company's actual revenues by that amount due to your contention that that much of the payment should be charged to construction and therefore not allowed as a deduction from revenue; that is correct, isn't it?

A. Yes.

Q. I am directing your attention, Mr. Hagenah, to your previous testimony and the figures in exhibits offered in evidence by you at the last hearing, because, in preparing for the cross-examination, we have not had the benefit of the exhibits put in by Mr. Morse this morning, but I am assuming that the questions of mine directed to those former exhibits will apply equally, except in amounts, to the exhibits that Mr. Morse put in this morning.

Are you familiar with the case of The City of Cincinnati against The Public Utilities Commission, reported in the 113 Ohio State, at page 259, where the Supreme Court of this State discussed a proposed similar treatment of ap-

proximately one-third, or of a portion any way, of the license revenue payment?

A. It was discussed in that case. I have not read it for some time. I am not sure that I have the holding in mind.

Q. Do you remember that the Court said there as follows: [fol. 3683] "The record discloses that in the hearing before the Commission counsel for the Cities stated to the Commission that he felt 'personally that the 4½ per cent is not exorbitant; I am not making a fight on that'; however he thought that the 4½ per cent should be apportioned between operating expenses and capital investment"? Now that is what you have done in this case, isn't it?

A. Yes. I might call your attention to that as a proper accounting distribution.

Q. Now do you remember that, continuing, the Court said: "This suggestion did not receive the approval of the Commission"—referring to the Ohio Commission—"nor does it meet with the approval of this Court. Manifestly such allocation cannot be made since the 4½ per cent became a part of the operating expenses of the Company." That ruling of the Court, if I understand it, is quite at variance with your contention in this case?

Mr. McConnaughey: We object.

Mr. Burr: The question is withdrawn.

Q. Now if I correctly understand you, you would apportion the License Contract payment between operating expenses and capital investment, wouldn't you in the exhibits covered by your testimony?

A. Yes, because I think the testimony of your witnesses on the 4½ per cent charge made it so evident that a large part of that service related to construction and another part related to operation. If a part of it is related to operation, then the charge should follow and be distributed be- [fol. 3684] tween operation and construction. The matter has been frequently discussed before Commissions; it is nothing new. I presume it is really a legal question as to what should be done with it.

Q. Now isn't it true that in the so-called West Virginia case that we have referred to from time to time, reported in the P. U. R. 1925 C, at page 570 to 580, you advocated the same apportionment of the License Contract payment between operating expenses and capital investment?

A. Yes; I made substantially the same suggestion there and put in an exhibit along the same lines as my exhibit No. 5 in this case.

Q. And your proposed apportionment was rejected by the Virginia Commission, wasn't it?

A. The Virginia or West Virginia?

Q. Or the West Virginia Commission, I should say?

A. Not altogether. I think they took that into consideration in fixing the measure of the rate of return. They have not stated precisely what they did. I am not sure just as to what weight they gave to it. If the Court having this subject fully presented in the record before it should say that such a distribution should not be made, I would not again advance the subject.

Q. Now didn't the West Virginia Supreme Court of Appeals in reviewing the decision of the Commission on this same point rule against your apportionment; do you remember that?

A. No, I do not think they exactly ruled against it. They rather approved what the Commission had done, but the [fol. 3685] Commission did give some effect to it in the rate of return. That is, of course, a matter of record. I have not seen the decision for a long time, but I believe some weight was given to it in fixing the rate of return, and that has been done in a number of States.

Q. In the recent case of "In the Matter of the Proposed Increased Rates and Charges of The Cincinnati & Suburban Bell Telephone Company, filed to become effective March 1st, 1926. Advanced Utility Rate Proceeding No. 226," decided by this Commission on the 7th day of February, 1927, were not you employed by the city of Cincinnati?

A. Yes, I was employed by them but I did not testify.

Q. I remember that.

A. And I made no report.

Q. I remember that.

A. I merely reviewed the exhibits and the records in the case for the City and advised them.

Q. Did you have anything to do with the preparation of a statement or letter which the Cincinnati City Solicitor addressed to the Commission?

A. I knew such a letter was addressed but I have not seen it.

Q. Didn't you give to the City Solicitor the suggestions on which that communication was based?

Mr. McConnaughey: We object.

Q. Well, I will put it this way then; don't you know that in that communication to this Commission precisely the same apportionment in principle of the License Contract payment as between expenses and capital was advocated as you are now advocating in this case?

[fol. 3686] A. I stated a moment ago that I had not seen that letter, but if there is any doubt about it I will say frankly that I did discuss with the City Solicitor and his assistants the matter embodied in my Exhibit No. 5 in this case. And I called attention to what the different Commissions had done with this subject, and specifically advised that the four per cent—or four and a half per cent as it was years ago—was a charge growing out of a contract which was distinctly to the advantage of the public; that I could not criticise it adversely in any effect; that I had studied it from many different angles, both employed by telephone companies and employed by cities and Commissions, but I felt that in accounting for the payment a portion should be charged to operation because The American Telephone & Telegraph Company always stressed the fact that they did a great deal under that contract for the benefit of the Company's operations.

Now some Commissions have made an apportionment; a larger number of them have not. I told them they might well bring that matter up for discussion in this case.

Counsel must understand that I am not testifying here or in any other case as an advocate. That is not my province. I merely bring out the facts as I say and call attention to obvious conclusions and present them for the information of the Commissions or judicial bodies. I have brought that subject up before. It is an open question. Even officials of telephone companies have suggested that there was merit in the idea of charging the operating de-

[fol. 3687] partments with a portion of the service received.

Q. Didn't they also tell you that it would be just as broad as it was long in the long run?

A. That depends on how you carry the resulting accounting steps that follow from that. It is not quite as broad as it is long.

Q. Well, to go back to the Cincinnati communication for a moment; do you know how the United States Government, through its Internal Revenue Department, treats the License Contract payment of the Bell System Companies as an item to be considered in computing the taxable income of both the receiving and the paying companies?

A. I have never heard of it being treated any differently than the Companies themselves treat it.

Q. That is, it is treated as an expense in its entirety, isn't it?

A. So far it is, yes; I do not know if the point has ever been argued.

Q. Mr. Hagenah, in the fourth line from the bottom of page 22 of your Exhibit No. 1 you show the amount of $59,293.39, representing the amortization of landed capital; do you find that?

A. Yes.

Q. Where have you made any allowance for that item in your Exhibit No. 6?

A. I have made no direct allowance for that, and before I could answer as to the proper disposition of that item I would have to confer with the accountant who made the accounting analysis.

[fol. 3688] Q. Will you do that, please?

A. Yes.

And thereupon the further hearing of this case was adjourned until Wednesday, February 16th, 1927, at ten o'clock A. M.

[fol. 3689] Morning Session

Wednesday, February 16, 1927.

WILLIAM J. HAGENAH, resuming the stand for further cross-examination, continued his testimony as follows:

Cross-examined by Mr. Burr:

Q. At the close of yesterday's hearing, we had been discussing the item of amortization of landed capital $59,293.39 shown in the fourth line from the bottom of Page 22 of your Exhibit No. 1, but excluded from Exhibit 6. Why wasn't any allowance made for that item?

A. I think there was a misunderstanding of the account through the title of it and term of amortization as distinct

from depreciation. The term amortization means the retirement of a principal sum and the restoration of the amount retired to the owners thereof. It was under that interpretation of title that it was considered a charge which would have to be liquidated through the amount provided for the fair return. I find, however, that this is really an addition to the deterioration requirement since there is not contained in the company's provision for depreciation any item for the retirement of right-of-way resulting from the reconstruction or changes in character of pole lines and other property to which the right-of-way is related. It is in effect like a secondary depreciation reserve, and under that interpretation as set forth in the classification of accounts, the conclusion set forth in Exhibit No. 6 under date [fol. 3690] of December 15th, would have to be changed to include this item in the operating expenses, resulting in a reduction in the last item on that page by the amount of $59,293 for the calendar year 1925.

Q. That should also be reflected in Morse Exhibit 16, should it not?

A. Yes, insofar as that relates to the calendar year 1926.

Q. Isn't the same thing true of the items of amortization of debt discount and expense?

A. No, those are——

Q. And miscellaneous deduction from income shown in lines 5 and 3 from the bottom of Page 22 of your Exhibit No. 1 in the last column?

A. It is not true with respect to the item of amortization of debt discount. That is a factor of interest and must be adjusted through charges against the fair return as it is complementary to the direct coupon interest rate.

Q. What about the miscellaneous deductions from income, $2,939.33?

A. Well, I have no analysis of that account before me. The instructions under account 341 cannot be applied to this item of $2,900 without an analysis of the charges contained therein. It would appear, however, from the first line that such charges should be taken care of through the fair return allowance and not treated as a part of the operating expense. The first line in the instruction says this account should include all deductions from gross income which are in the nature of fixed charges and not otherwise provided for. I assume the term fixed charges there is to

be given the ordinary accounting meaning, such as interest [fol. 3691] on obligations. To the extent that these are reflected in the property value, they would have to be liquidated through the fair return.

Q. Returning for a moment to the debt discount and expense of $2588.91; what does that represent, if you please?

A. I assume it means just what the account shows, amortization of debt discount and expense; that is, it is a writing off of the discount which was incurred in the sale of the securities and the expense related thereto. Those charges are ordinarily written off at a definite rate made necessary by the period or life of the debt; and as the principal charge or the interest is to be taken out of the amount allowed for fair return, any item of discount should be treated in the same way. If the coupon rate had been somewhat higher, there would have been no discount; at any rate, the coupon rate can be made so high that there will be no discount, consequently, the discount must be considered as a factor of interest. That is the general holding on that subject.

Q. Returning for a moment to the net non-operating revenue shown in Exhibit Number 6 at $346,220.58, and in Morse Exhibit 16 at $497,859.22; most of that item represents revenues not paid by the subscribers, does it not?

A. Yes.

Q. And you count the item as a part of the company's revenue in computing its adjusted net income available for return on the fair value of the property?

A. Yes, because it is incidental to the company's operation. Interest on the bank balances of the company are also [fol. 3692] not paid by the subscribers, but are proper items to consider in determining the net return from the company's operations. Rent from any part of the property which is temporarily devoted to non-utility operations is also a proper non-operating revenue to be considered in determining the net return from the business as a whole; and any use of the company's funds pending the ultimate use in constructing operating property is to be received upon interest and credited against the other charges, which result in substantially the same effect on operating returns as the method which I have used and set forth in Exhibit 6.

Q. Most of that revenue, that is to say the net non-operating revenue, represents a credit to revenue of interest during construction on construction work in progress, doesn't it?

A. That is the principal item, yes, sir.

Q. Yes; and so far you have made no allowance in or addition to your appraisal for the construction work in progress represented by that interest?

A. No, I haven't; but I have stated that some adjustment of that character is necessary in determining the final rate base.

Q. Yes. This is really partly a review of what we went over yesterday?

A. Yes, sir.

Q. And I am trying to bring it together in one place?

A. The actual construction in process has fluctuated from a little over three million dollars to as high as nine million dollars in the course of a year, and it will be readily apparent that if I had made an adjustment of either of those items, it might have been an improper conclusion to use at [fol. 3693] the time when the final rate base is determined. I am, however, ready to state that whatever the construction work in progress account may show at the time when the rate base is finally determined, there should be a segregation between those items which are to be revenue producing and which have interest during construction charged to them during the period of construction and those which will not be revenue producing such as the new office building, which represents a large capital investment and will have to be provided for out of the rates now to go into effect.

Q. In your direct examination, you described your personal inspection of the property of the company involved in this same case in order to ascertain the per cent condition; and I believe you heard Mr. Sloane and Mr. Stephens and Mr. Meyers and Mr. Williams all testify for the company as to the personal inspections made by them of the same property, did you not?

A. Yes.

Q. Now, it is a fact, is it not, that in addition to Mr. Williams' and Mr. Sloane's testimony on per cent condition, Mr. Stephens testified as to per cent condition of all the various classes of plant, and Mr. Meyers testified as to the per cent condition of buildings, building by building?

A. Yes.

Q. With respect to buildings as to which you find a per cent condition of 90.18, do you recall that in addition to the 93 per cent found for buildings by Mr. Sloane, Mr.

Stephens also found 93 per cent and Mr. Meyers found 93.4 per cent; do you remember that?

A. Yes, sir.

[fol. 3694] Q. So that in using 90.18 per cent yourself, you are more than 2.8 per cent under Mr. Sloane, Mr. Stephens and Mr. Meyers?

A. Yes.

Q. In fact, you are 3.2 per cent under Mr. Meyers, the company's building engineer?

A. That is right. I agreed with Mr. Williams, who also found 90 per cent, although, when I made my inspection I didn't have before me the results of any of the engineers who made the inspections on behalf of the company. I made my own examination and arrived at my own conclusion. The fact that there is no difference between the highest and lowest in excess of three per cent, seems to me a very close agreement.

Q. Did you make a personal inspection of the Alliance Central Office Building for which Mr. Meyers, the Company's appraisal engineer, has given a per cent condition of 95 per cent?

A. No, I didn't.

Q. Did you examine or make a personal inspection of Canton Building Number 2?

A. No.

Q. If I recall, I think you said you didn't examine Canton Number 3, either?

A. That is right.

Q. That is right; I remember now. Well, now, the Canton Building Number 3 was brand new at the time of your per cent condition computation, wasn't it?

A. I understand so from the records; but I haven't seen it. I didn't visit all of the buildings, but with a few exceptions, I visited all those in the large cities except Canton. That was the one city that hadn't been touched at the time we were compelled to contract our operations because of the time that was being taken up with the work.

[fol. 3695] Q. I don't remember whether you said you personally inspected the Marietta Building or not?

A. No, I wasn't in Marietta.

Q. Or Massillon?

A. No, I didn't go to any of the smaller cities.

Q. Or Piqua?

A. No, sir.

Q. Now, it is true, is it not, that except in the case of the exchange submarine cable, toll submarine cable, and general store equipment, which are negligible items, the toll pole lines and general stable and garage equipment, your per cent condition is lower than Mr. Sloane and than Mr. Williams and then Mr. Stephens?

A. In general, that is true. There are some instances where there is an exact agreement with one of your engineers. In fact, there is a wider difference between your engineers than there is between some of your engineers and my report.

Q. Now, in your composite per cent condition, you are more than three per cent lower than Mr. Williams, are you not?

A. Yes, just about; 3.09 per cent.

Q. Yes. Your exhibit shows a composite rate of 87 per cent whereas actually, it is 86.65 per cent, is it not?

A. That may be true. In my Exhibit Number 3, I haven't carried out the decimal places. That is, however, a difference of only about 3 per cent lower than Mr. Williams' figure and 2½ per cent lower than Mr. Sloane's figure; and when different engineers make inspections at different times, approaching the subject from different aspects, and agree within two and a half per cent or three per cent, I [fol. 3696] think the work has been pretty thoroughly done. In individual cases, I am higher than your men; in some cases, I am lower. I have attached greater significance to some factors than they have. But, what we observed was merely evidence on which our final judgment was based, and my conclusion was that the depreciation existing in the property was 2½ to 3 per cent more than they found. Also, in some cases we were in agreement and in some cases we were even farther apart than three per cent.

Q. Now, the main items of plant included in the term station equipment, that is to say station apparatus, private branch exchanges and booths and special fittings are among the shortest lived of all the company's property, are they not?

A. Yes, sir.

Q. That means that this class of plant has a more rapid turnover than most of the other classes of plants?

A. Yes.

Q. And it is also true, is it not, that as this class of plant is taken out of service, it is in a high per cent condition?

A. In a relatively high per cent condition than other classes.

Q. Yes. And when it comes out of service, it is renewed, is it not, as a rule, and made as good as new before being placed again in service?

A. The practice is to send it back to the manufacturer or to your own warehouses or shops for such overhauling and cleaning and repair as inspection proves to be necessary; wherever possible the item of property, is used over [fol. 3697] again, and sometimes may go through the repair department two or three time before it is finally retired from service.

Q. And each time it is put out after going through the repair department, it is practically as good as new, is it not?

A. From a wearing standpoint, yes; but it does show some effect.

Q. Calling your attention next to the item of exchange underground cable for which you show 92 per cent. condition in your Exhibit Number 3; it is true, is it not, that exchange underground cable consists of a lead sheet covering inclosing a given number of pairs of insulated wire?

A. Lead cover or other metal alloys.

Q. Yes; and that cable runs in underground ducts terminating in manholes, doesn't it?

A. Yes, manholes and vaults.

Q. Do you recall how much of the main underground cable of the company you yourself examined in order to arrive at the 91.85 per cent. condition as ascribed to you to that class of property?

A. I didn't personally examine much of it. I was in the cable vaults of every building that I inspected, looked into a number of the manholes, but I didn't personally go into them and made no personal inspection; but had engineers in my employ assigned to this work who do specialize in that kind of work, and they were in, as I recall, over 900 manholes where they made very careful examination of the cable.

Q. Now, in order to shorten the testimony as much as [fol. 3698] possible, let me ask you whether you didn't find the property of the company in a very good condition?

A. Yes, I did.

Q. All the way through?

A. I did; and I so stated in my direct testimony, that the company deserved credit for the high state of maintenance, and that there was no outstanding instance of where property could at that time be retired without sacrificing some remaining value in the units.

Q. I remember that now.

A. But there was depreciation taking place in the property even at that time; and that is natural and inevitable.

Q. Isn't it true that with respect to the accounts shown in the books of the company as "reserve for accrued depreciation" that account represents various bookkeeping items and not reserve in the sense that a particular fund is set aside for that specific purpose?

A. It represents a specific reserve, and is built up from very definite and substantial charges against operating expenses; but there is no liquid fund set aside and kept intact for replacement demands.

Q. The account is really a piece of accounting machinery which facilitates the charging of costs used up to operating expenses in equal monthly installments instead of in lump sums; is it not?

A. Yes.

Q. And it provides for taking out of the capital account, the costs of property retired from service?

A. Yes.

Q. Now, in the account, the cost of property used up less the net salvage is taken care of by monthly charges to oper-
[fol. 3699] ating expenses; that is true, isn't it?

A. Yes, sir.

Q. Now, in order to offset those charges, monthly credits in like amounts are made to this account?

A. Yes. Those all required by your official classification of accounts.

Q. It is also true, generally, is it not, that the money represented by those entries goes into the general funds of the company and through them finds its way into the property and plant owned by the company?

A. No, not in that form. The bookkeeping transactions are quite specific and the reserve is kept distinct from the other property; it is not merged with the general assets or funds of the company except as the cash itself is merged.

Q. Yes.

A. But the accounting is very definite and exact.

Q. Yes; well, that is what I am talking about, the cash is merged into the property and plant of the company, isn't it?

A. Through investment in extinctions and betterments it does find its way temporarily into the plant account.

Q. Yes.

A. But that is shown in Morse Exhibit Number 6 entitled "Sources and application of fund" where it appears to what extent the credit balance of a depreciation reserve has found its way into the property and plant.

Q. Exactly. Now, it is also true, isn't it, that in examining the books of the company you didn't find any cash or investment securities specifically representing the reserve [fol. 3700] for accrued depreciation?

A. No, I know of none.

Q. In other words, the reserve didn't represent any dollars for investments so tagged or marked as to identify them with any reserve fund for depreciation.

A. No. After a dollar is spent for property and plant, that item is put into service, it is impossible to ascertain whether it has been financed by the sale of bonds, shares, borrowing on notes or from the depreciation reserve. The reserve is merely an unseparated part of the general property and plant.

Q. Now, the money represented by the balance in the reserve for accrued depreciation account comes from the company's subscribers as a part of its operating revenues in the same manner as any other revenues are derived from payments made by subscribers.

A. Yes; it is part of the operating expenses.

Mr. McConnaughey: Expenses or revenue?

The Witness: Part of the operating expenses; accrued depreciation.

Q. Now, it is also a fact—I am not sure but what you stated it a moment ago, but I will ask you again—it is also a fact, is it not, that the money represented by the account balance for accrued depreciation has been expended by the company for plant and equipment, and that the plant and equipment are a part of the physical property of the company heretofore appraised by you?

A. Yes; and our exhibits in this case so indicate.

[fol. 3701] Q. Yes. Still on the subject of the reserve for accrued depreciation, in your Exhibits 2, 3 and 6 and in your oral testimony, you have, among other things, done the following three things:

First, you have deducted from your appraisal of the reproduction cost new of the property the sum of $15,000,000.00 in round figures, representing your judgment of the depreciation and obsolescence existing in the property as of your appraisal date?

A. Yes.

Q. Second, you have taken the company's total revenues from its books, which include the revenues produced by the property representing the reserve for accrued depreciation?

A. Yes.

Q. And third, to those total revenues, you have credited or added approximately three quarters of a million dollars representing your computed interest on the amount of the reserve for accrued depreciation; that is true, isn't it?

A. That is correct on the basis of the percentage shown in Exhibit 6, and by way of illustration.

Q. Yes; using the percentage which you have there used, it comes to about three quarters of a million dollars?

A. Yes.

Q. And that amount you have credited or added to the company's total revenues?

A. Yes, sir; that is credited to the net revenue of the company.

Q. Yes.

A. By way of an adjustment.

Q. Now, the company on the other hand has in its exhibits and oral testimony first deducted from its appraisal of the [fol. 3702] reproduction cost new of the property, an amount representing the accrued or existing depreciation?

A. Yes.

Q. And second, the company has included in its revenue thus produced by the property represented by the reserve for accrued depreciation?

A. Yes.

Q. And third, it has not credited or added to its revenue whether net or otherwise, any amount representing your or any computed interest on the amount of the reserve for depreciation?

A. That is right. After the first of the three items you have referred to, the only difference between us is as to the amount of the existing depreciation. We recognize the existence of depreciation. One of your engineers says it is 12,787,000 another 13,700,000, and I place it at 15,000,000. As to the second point, we follow precisely the same practice. As to the third, we are quite apart.

Q. Yes, a direct disagreement?

A. Yes.

Q. Calling your attention again to the recent case involving the rates of the Cincinnati and Suburban Bell Telephone Company, A. U. R. P. Number 226 on the dockets of this Commission, isn't it true, that the city in that case advocated the same credit, that is the same kind of credit, to revenues representing interest on the amount of the reserve for accrued depreciation that you are advocating in this case?

A. I don't know. I didn't attend any of the sessions, didn't testify in the case; I have never read the transcript. And you referred yesterday to a letter which had been [fol. 3703] written to the city, which I have never seen.

Q. I see.

A. I did discuss it with the City attorney, but I didn't know——

Commissioner Maullar: Wasn't that same question asked yesterday?

Mr. Burr: No, it is on another subject, Your Honor.

The Witness: I do not know whether there is anything in the record in that shape on the subject, and I have seen nothing touching on that subject in the decision to which you have referred.

Q. Well, that is that. On Page 2 of your Exhibit Number 7 on the cost of money——

A. I think you will notice the exhibit is not entitled "Cost of money", but "The measure of a fair return." What is the specific reference to which you direct my attention?

Q. On Page 2, if you please, your Exhibit Number 7?

A. Yes.

Q. You say "Of all the factors influencing the borrowing of money, none is more important than the character and credit position of the borrower." Will you please tell the Commission what you mean by character and how you dis-

tinguish between the character on the one hand and the credit position on the other hand of the borrower?

A. I am not here confining the sentence to a corporation, but I am treating a borrower in the broadest credit definition. By the character of a borrower, I mean his reputation for truly reflecting his busines capacity, his ability, and the assets which he commands. I also have in mind [fol. 3704] his sense of fairness with which he regards an obligation. I can conceive of a man who has the wealth and has a very high credit ability, but who is so artful in dodging or evading or shifting his obligations, that a bank might prefer not to deal with him at all. If I may refer to a quotation by one of the world's greatest bankers, the elder J. P. Morgan, he stated that he attached more importance to the character of a borrower than he did to what his balance sheets reflected. Now, answering more specifically your question, I can conceive that a corporation has a character distinguished from its credit position. I would say that its character is reflected by the promptness with which it meets maturing obligations, instead of seeking refunding operation; the amount of litigation which the company has, the good will with which it is regarded by the public generally and by its subscribers. These may be present in a varying degree, wholly apart from the measure of assets that the company possesses.

Q. Well, now, by credit position, do you mean the ability of the utility to borrow or the ability of the utility to pay?

A. The subject has two sides. In borrowing the money, its character must be favorably shown and its credit position made known. In paying back that obligation, its assets and earning power are the most important factors, and its factorable character is then taken for granted. If it is not present, the loan may be forced to pay through the courts; but the attitude which the company takes in meeting one [fol. 3705] obligation determines whether the people it deals with are going to have any further relations with it.

Q. Well, now, on Page 2 of your Exhibit 7, you say, "In times when the capital of the country is controlled in the investment centers, it is the company of proven credit that can strengthen its capital structure and borrow at rates below the average." Now, what do you mean by the phrase, "Can strengthen its capital structure", if you please?

A. The kind of a company to which I have reference can in periods of financial uncertainty and stress raise money